



**Report on the Health**  
**OF THE**  
**County Borough of Stockport,**  
**FOR THE YEAR**  
**1895,**

**BY**  
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**MEDICAL OFFICER OF HEALTH,**

**AND**

**Medical Superintendent of the Isolation Hospitals.**

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**STOCKPORT :**

**NEW CHESHIRE COUNTY NEWS CO., LIMITED, WELLINGTON STREET.**

# SANITARY COMMITTEE, 1895.

————:o:————

*Chairman*—COUNCILLOR WILLIAM BELL.

*Vice-chairman*—COUNCILLOR HANCOCK.

THE MAYOR.

ALDERMEN GOULDEN, HALLAM, MELLOR.

COUNCILLORS ALLCOCK, BRETNALL, BOSTOCK, BROADHURST, FILDES,

HIDDERLEY, J. G. JOHNSON, W. JOHNSON, J. LOMAS, LOWE,

MARRIOTT, MINSHULL, REDFERN, SHUTTLEWORTH, STOTT,

WAKEFIELD, WINKLEY, AND WILLIAM WOOD.

## MONDAY—FIXED MEETINGS.

January	14	April	22	July	29	November	4
„	28	May	6	August	12	„	18
February	11	„	20	„	26	December	2
„	25	June	3	September	9	„	16
March	11	„	17	„	23	„	30
„	25	July	1	October	7		
April	8	„	15	„	21		

AT 3 O'CLOCK P.M.

————:o:————

## HOSPITAL SUB-COMMITTEE.

————:o:————

*Chairman*—COUNCILLOR ALLCOCK.

ALDERMAN GOULDEN.

COUNCILLORS WILLIAM BELL, BROADHURST, BOSTOCK, FILDES, HANCOCK,

HIDDERLEY, J. G. JOHNSON, W. JOHNSON, MARRIOTT,

MINSHULL, STOTT, AND WINKLEY.

MEETINGS—WHEN REQUIRED.



## COUNTY BOROUGH OF STOCKPORT.

Public Health Department,  
September 21st, 1896.

To the Right Worshipful the Mayor, Aldermen, and Councillors of the  
County Borough of Stockport.

Mr. Mayor and Gentlemen,

I have the honour of submitting to you my Report upon the Health of your Borough during the year 1895, prepared in compliance with the orders of, and on the lines indicated by, the Local Government Board. Unavoidable delay in obtaining figures as to the number of houses in each of the re-arranged Wards is mainly responsible for the late date at which it is presented to you.

The general death-rate per 1000 persons living was 24·8 in 1895, as compared with an average annual rate of 24·7 for the preceding decennium, including the exceptionally favoured year 1894, when the death-rate throughout the country was by far the lowest ever recorded. Compared with the two preceding years, the returns of 1895 show **a remarkable increase in the number of deaths from respiratory maladies and heart disease**; a very **severe epidemic of measles**, which swept the Borough from north to south during the 2nd, 3rd, and 4th quarters, caused a mortality equal to a rate of 9·5 per 1000 persons living under 5 years of age, and added 1·1 per 1000 to the general death-rate; **whooping cough** was also very prevalent, and there were a comparatively large number of deaths from **influenza**. **Infantile diarrhoea** was, as usual, most **unduly prominent**, being, indeed, second only to respiratory disease as a factor of the year's mortality. With regard to the more strictly preventible diseases, the results of your efforts to deal with **scarlet fever** were very encouraging, both as regards the number of cases notified and the resulting mortality. **Diphtheritic disease** was again strongly in evidence, all the deaths referred to this cause being amongst children under 7 years of age, and I was surprised to find that the elementary schools appear to have had but a very limited share in disseminating the malady (vide pp. 33 and 34). **Typhoid fever** claimed 20 victims, and further evidence was furnished of the **baneful influence of the midden-privy system** in spreading this disease.

I desire to invite your attention specially to the section of this report (vide pp. 26-28) dealing with the "**Prevention and Control of Epidemics of Measles**," and the measures which the Local Government Board have recently urged Sanitary Authorities to adopt for this purpose.

The question of “**Recurrent Cases of Scarlet Fever**,” i.e., its appearance in a house after the return thereto of a recovered hospital patient, is also one of great practical importance to you as a Sanitary Authority, and is dealt with in some detail at pages 28 to 31.

The results of hospital *versus* home treatment of infectious illness are given at page 41, and will be gratifying to you.

The sanitary supervision of public water supplies, and the domestic use of carburetted water-gas are considered at page 45.

The problem of “**Sewage Treatment**” is one which will shortly engage your earnest consideration, and I have therefore summarized at pages 53 and 54, for your information, some of the most important results of recent scientific inquiry in this direction.

At pages 58 to 60 are set forth the experiences of 25 large towns with regard to the practical working of the Water-Carriage System.

I have once more to acknowledge the kind assistance of Dr. Rayner and Dr. Hyde Marriott during my necessary absences from the Borough. I am also much indebted to the Town Clerk, your other Chief Officials, and the staff of your Health Department and Hospital.

I have again to cordially thank the Chairman and Members of the Sanitary Committee and the members of the Council in general for the courteous consideration and encouraging support with which they have continued to favour me.

I have the honour to be,

Mr. Mayor and Gentlemen,

Your obedient servant,

CHARLES PORTER,

Medical Officer of Health.

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## COUNTY BOROUGH OF STOCKPORT, 1895.

Estimated Population	-	-	-	75,360
Area	-	-	-	2,200 acres
Rateable Value	-	-	£279,142 : 10 : 0	
Value of a Penny Rate	-	-	£1,163 : 1 : 10½	
General Death-Rate per 1000	-	-	-	24·8
Deaths of Infants under 1 year per 1000 births				231
Zymotic Death Rate	-	-	-	4·4
Phthisis Death-Rate	-	-	-	2·2



# INDEX.

## A

Abattoir, Public, desirability of.....	66
Aeration, Forced, of filters for Sewage.....	55
Age and Sex in Relation to Mortality .....	14, 15
Area of Borough .....	10

## B

Back to Back Houses .....	47
Bakehouses .....	65
Prohibited in Cellars .....	65
Baths .....	46
Bathers, weekly number of.....	46
Bill of Mortality (1750—1800) ....	5
Births and Birth-rate .....	12
Birthplaces .....	8
Block-system of Scavenging .....	60
Brook-courses, Brook-culverts ....	50
Bronchitis, Pneumonia, and Pleurisy	36
Bye-laws .....	62

## C

Canal .....	67
Cellar Dwellings .....	47
Cemetery.....	43
Census Returns .....	7-9
Civil and Ecclesiastical Parishes, Wards, Tenements .....	7
Sex and Age, Distribution of Population .....	8
Conditions as to Marriage, Birth- places, &c. ....	8
Chlorinated Water as a Disinfectant	43
Coffee, Adulteration of.....	67
Coffins, "Sanitary," so-called ....	44
Common Lodging Houses ....	66
Unsatisfactory Nature of.....	66
Comparative Statistics of Stockport and similar Towns .....	17
Complaints by Public .....	64
Consumption, Pulmonary (Phthisis)	36
Contagious Diseases (Animals) Act	36
Continued Fever .....	22
Coroner's Certificates .....	17
Cowsheds .....	65

## D

Dairies .....	65
Day Scavenging Department.....	61
Deaths and Death-rate.....	12-13
Diarrhœa, Causes and Prevalence	22
A Cause of Infant Mortality ....	18
Relation to Earth Temperature..	23
Diphtheria .....	31
Prevalence in 1895.....	31-33
Bacterioscopic Examination in ..	34
Hospital Treatment desirable....	34
Relation to Insanitary conditions	32
Relation to Elementary Schools	33
Disinfection .....	43
Disinfecting Apparatus .....	43
Drains, Watertight, necessity for ..	48

## E

Enteric Fever.....	22
Occurrences and Deaths.....	22
Influence of Geological Conforma- tion .....	22
Liability to Future Outbreaks ..	22
Erysipelas .....	35
Estimated Population, 1895 .....	10
Excrement Disposal.....	55-62

## F

Factory Labour and Infant Mor- tality .....	19
Flushing Tanks for Sewers.....	51
Flushing Van.....	52
Food and Drugs Act, Sale of .....	67
Food Vendors, Notice to.....	68
Foreigners .....	8
Future Action, Lines of .....	70

## G

Gas, Carburetted Water.....	45
General Inspections .....	63
Geological Features of District ....	5
Growth of Stockport, 1754—1895 ..	5-10

## H

Hospital Accommodation, Necessity for increased .....	42
House Census, Annual, necessary ..	11
House Drainage.....	48-49
Houses in each Ward .....	11
Houses Let in Lodgings, Tenements	67
Housing of the Working Classes.....	46-47-48
Hygiene, Instruction in desirable ..	19

## I

Industries .....	46
Infantile Mortality, Causes and Pre- vention of .....	18-19
Infantile Birth-rate and Mortality..	18
Infant Deaths, 1889—1895, Analyses of Causes.....	opp 18
Infant Insurance .....	18
Infectious Diseases Notification Act	20
" " Method of Deal- ing with .....	43
Infirmary, Deaths in.....	16
Influenza .....	34
Cause of Excessive Respiratory Mortality.....	35
Inquests .....	17
Inspection, General, of District....	63
Intercepting Sewers .....	53
Introductory Remarks.....	3-4
Isolation Hospitals Site, Distance from Dwellings, Cost, Income and Expenditure, 1888—1895, Description, Staff, Structural Alterations, Need for Extension, &c. ....	38-42

## L

Lampholes .....	51
Laundry, Steam, at Hospital .....	41
Legal Proceedings .....	69
Lighting .....	46
Low, Dr. Bruce, Recommendation of .....	44-55
Lung Diseases .....	36
Increased Mortality from .....	36

## M

Manholes .....	51
Map of Wards .....	opp 12
Marriages and Marriage Rate .....	10
Measles .....	23
Epidemic of 1895 .....	23-24
Special Report on the L.G.B.'s Recommendations <i>re</i> Control and Prevention of .....	25-27
Meat Inspection .....	65-66
Membranous Croup (see Diphtheria) .....	31
Meteorological Station .....	46
Midwives and Puerperal Fever .....	35
Milk, Adulteration of .....	67
Milkshops .....	65

## N

Night Scavenging Department .....	61
Notifications of Infectious Diseases .....	20
Procedure on receipt of .....	43
Nurseries, Registered Cottage ..	19,70

## O

Occupations of Males and Females, Census 1891 .....	9
Offensive Trades .....	66

## P

Penny Rate, Value of .....	4
Phthisis, see Consumption .....	36
Pleurisy .....	36
Pneumonia .....	36
Population, estimated .....	10
Privies, Converted to Water Closets .....	64
Privies, new, in 1894 and 1895 .....	60
Privy-middens, Danger to Health from .....	3; 22, 32, 55, 56, 60, 70
Privy-middens, Schemes for con- version of .....	57
Prosecutions .....	69
General .....	69
Meat .....	69
Public Health (Water) Act, 1878 ..	45
Puerperal Fever .....	35
Purification of Sewage .....	53, 54, 55

## R

Rabies .....	36-38
Rateable Value .....	4
Recurrent cases of Scarlet Fever ..	28-31
Redrainage of Houses .....	64
Refuse disposal .....	55-62
Revision of Bye-laws .....	62
Rivers Goyt, Tame, and Mersey ..	46

## S

Sanitary Committee, Members of ..	2
Scamped " Drainage Work .....	64

Scarlet Fever .....	28
Recurrences after discharge from Hospital, Special Report on ..	28-31
Scavenging .....	55-62
Block-system of .....	60
Cost of .....	57-61
Nuisance from .....	60

Schools .....	
Closet accommodation of .....	55
Foci of Scarlet Fever .....	28
„ Measles .....	24, 26, 27
„ Diphtheria .....	32-33
Medical Inspection of .....	43
Sewage, treatment of .....	53, 54, 55
Sewerage System .....	49
Old Flagged Sewers .....	49
Brook Courses .....	50
Modern and New Sewers .....	51
Intercepting Sewers .....	53
Flushing .....	51
Ventilation .....	51
Special Action of Highways Com- mittee .....	52

Sex and Age in relation to Mortality .....	14-15
Shaft Ventilation .....	51
"Single" Houses .....	47
Slaughter-houses .....	65
Slop Water-closets .....	55
Slop Water-closets, Report on use of in 25 towns .....	58-59
Smallpox .....	20
Smoke Nuisances .....	67
Statistics .....	5-18
Statistical Summary .....	opp 13
Surface Configuration of District ..	5

## T

Tenements .....	67
Tips .....	61
Trades, Chief .....	46
Tripe Dressers .....	66
Typhoid Fever, see Enteric .....	22

## U

Uncertified deaths .....	17
Unoccupied dwellings .....	11

## V

Vaccination .....	21
Ventilation of Workshops .....	66
Ventilation of Sewers .....	51

## W

Wards, Map of .....	opp 12
Wards, New, .....	6, 11, 47
Water Closet system in other towns ..	58-59
Water Filtration, Frankland on .....	44
Water - Gas, Carburetted, Pre- cautions in regard to use of .....	45
Water Supply .....	44-45
Water-test for drains .....	48
Waterworks, right of entry to .....	44-45
Well, polluted, closure of .....	45
Whitehill Hospital .....	41-42
Whooping Cough .....	35
Workshops, Inspection of, &c. ....	66

## Z

Zymotic Disease .....	19 &c
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## Topographical Features of Stockport.

**SURFACE CONFIGURATION.** Stockport is said to derive its name from two Saxon words, signifying "a castle in a wood." As regards its sight an old writer quaintly says, "there is not in England a more irregular spot of ground than that upon which this town stands." Occupying the summit of an eminence, overlooking the Mersey from the south are the Castle Yard and Market Place, which are believed to correspond with the site of the ancient town, and are approached from below by steep and narrow streets. In its growth the town has extended upwards and laterally on both the Cheshire and Lancashire sides of the valley, through which flows the River Mersey, formed by the junction of the two streams, Goyt and Tame, the newest portions of the Borough now being at a considerable distance from the river.

**GEOLOGY.\*** The Coal Measures, Permian Sandstone, Permian Marl, and Pebble Beds form the solid rocks of the District. Overlying them is the Glacial Drift presenting great variations in thickness and in the proportion of the sand, gravel, and clay of which the beds are composed. On the Cheshire side of the River Mersey, the greatest depth (111 feet) is said to occur near the junction of Hempshaw lane and Higher Hillgate. From this point the thickness of the Drift diminishes from 90 feet under Castle street to 47 feet at the western boundary of Edgeley. On the Lancashire side of the river the thickness of the Drift which is about 40 feet at the junction of Coronation street and Sandy lane increases to nearly 127 feet at the Chemical Works at North Reddish. The order of superposition of the sand, gravel, and clay composing the Drift also varies very much, and it can hardly be doubted that under certain circumstances the existing geological conditions exert an important influence on the health of the community.

## Growth and Vital Statistics of Stockport.

The first written document of the existence of Stockport Castle is dated in the year 1173, in the nineteenth year of Henry the Second. About 1220 A.D., Stockport was constituted a free borough, by virtue of a charter granted at that time by the feudal lord, Sir Robert de Stokeport. Up to the passing of the Reform Act of 1832, the township of Stockport, which was co-extensive with the Manor and Barony, comprised the whole town. With regard to statistics it is stated that in the years 1664 and 1665 respectively 67 and 101 deaths were occasioned by the plague, and with reference to the latter half of the following century, the appended interesting information is given by Corry:—

STOCKPORT BILL OF MORTALITY.

YEAR.	MARRIED.	BAPTIZED.	BURIED.
1750	47	107	206
1770	93	110	209
1780	108	173	250
1790	224	316	369
1800	—	564	656

\* Vide "Notes on Glacial Geology of Stockport," by J. W. Gray, F.G.S.

The earliest enumeration of the population was taken in 1754, and may be here quoted together with the statistics of the first four decades of the present century :—

# STATISTICS OF THE TOWNSHIP OF STOCKPORT.

EXTENT 1740 STATUTE ACRES.

YEAR.	INHABITED HOUSES.	FAMILIES.	MALES.	FEMALES.	POPULATION	ANNUAL RATEABLE VALUE.	YEAR.
						£ s. d.	
1754	995 <sup>a</sup>	741	—	—	3101	1879 0 0 <sup>b</sup>	1754
1801	2572	2965	6983	7847	14830	11284 5 0 <sup>c</sup>	1801
1811	3162	3563	7977	9568	17545	—	1811
1821	3405	4342	10495	11231	21726	44117 0 0 <sup>d</sup>	1821
1831	4973	5229	12221	13248	25469	52477 0 0 <sup>e</sup>	1831

<sup>a</sup> In 1779

<sup>b</sup> In 1868

<sup>c</sup> In 1792

<sup>d</sup> In 1819

<sup>e</sup> In 1836.

In 1832 the constitution of the Parliamentary borough was altered by statute, and was made to include, in addition to the ancient township, portions of the township of Cheadle Bulkeley, Cheadle Moseley, and Brinnington in the County of Chester, and of Heaton Norris in the County of Lancaster. In 1836 by the passing of the Municipal Corporations' Act, the Borough of Stockport was incorporated, and was included in the list of towns to be divided into seven wards with a Council of fourteen Aldermen and forty-two councillors. In 1888 Stockport was constituted a County Borough by the Local Government Board Act, of that year. In 1895 there was a re-arrangement and multiplication of the Wards, which now number 14.

The particulars set forth in the following table record the general growth of the Borough during the fifty years, 1841 to 1891 :—

Census of Popula- tion.	Increase or decrease per cent in previous decennium.	Inhabited Houses.	Uninhabit'd Houses.	Houses building.	Rateable Value.
					£ s. d.
1841 .. 50,495	—	8,814	1,157	—	113,813 3 0
1851 .. 53,835	6.6 increase.	10,568	—	—	106,732 0 0
1861 .. 54,682	1.5 decrease.	11,298	—	—	113,936 13 10
1871 .. 53,001	3.1 increase.	—	—	—	144,660 14 0
1881 .. 59,544	12.3 increase.	13,007	1,558	74	189,450 0 0
1891 .. 70,263	18.0 increase.	15,573	1,216	100	236,952 9 8

A study of these figures show that during this time, 1841 to 1891, the increase in the population has been equal to 39.1 per cent. of that in 1841. In the forty years, 1851 to 1891, the increase has been at the rate of 30.5 per cent. During the decennia 1851 to 1861 and 1861 to 1871, the Crimean War, Indian Mutiny, the great Weaving Strike, and the Cotton Famine. occurred, and it is perhaps not surprisins that the population practically remained stationery; from the end to the latter period, however, up to 1891, it has increased at the rate of 32.5 per cent. Finally the census returns of 1891 show an increase of 18.0 per cent, over those of 1881.



# Information with regard to the County Borough of Stockport from the Census Returns of 1891.

## CIVIL PARISHES OR TOWNSHIPS.\*

	Inhabited Houses.		Families or Separate Occupiers.		Population.
Brinnington (part of) ...	1,446	...	1,463	...	6,576
Cheadle (part of) ...	2,267	...	2,273	...	10,022
Heaton Norris (part of) ...	3,746	...	3,819	...	16,368
Stockport ...	8,114	...	8,222	...	37,297
County Borough of Stockport	15,573		15,777		70,263

\* By "Civil Parish or Township" is meant a place in which a poor rate is separately levied.

## THE ECCLESIASTICAL PARISHES OR DISTRICTS.

### STOCKPORT

	Date of Formation.	Inhabited Houses.	Population.
St. Mary ...	...	2,853	12,807
St. Matthew with Brinksway	1844	2,402	10,586
St. Peter ...	1838	810	3,507
St. Thomas ...	1875	4,800	22,621
PORTWOOD, St. Paul ...	1846	1,538	7,061

## MUNICIPAL WARDS.

Ward.	Houses.			Population.		
	Inhabited.	Uninhabited.	Building.	Persons.	Males.	Females.
Edgeley ...	4,104	190	27	18,889	8,616	10,273
Heaton Norris ...	3,746	229	6	16,368	7,577	8,791
Middle ...	1,779	246	—	8,050	3,851	4,199
Portwood ...	1,829	239	1	8,195	3,886	4,309
St. Mary ...	1,387	196	48	6,124	2,803	3,321
St. Thomas ...	2,728	116	18	12,637	6,056	6,581
Totals ...	15,573	1,216	100	70,263	32,789	37,474

\* The Registrar General states that the above return of "uninhabited houses" includes in most cases lock-up shops, factories, and offices.

## TENEMENTS.\*

TOTAL TENEMENTS, 15,777.

Rooms in Tenement.	No. of Tenements with less than 5 rooms.	Number of occupants or tenements.											
		1	2	3	4	5	6	7	8	9	10	11	12 or more
1	159	45	63	25	15	6	3	2	—	—	—	—	—
2	1875	325	576	385	230	162	106	49	28	12	—	1	1
3	578	41	128	122	104	64	52	34	15	9	3	1	5
4	7963	249	1310	1563	1435	1209	867	641	366	186	91	33	13

\* The Census instructions define a tenement as "any house or part of a house separately occupied by the owner or by a tenant."

AGES OF MALES AND FEMALES.

Age Period.	Males.	Females.	Age Period.	Males.	Females.
Under 1 year ...	888	936	35 years & under 40 years	2,284	2,590
1 year and under 2 years	793	817	40 „ „ 45 „	1,909	2,129
2 years „ 3 „	768	776	45 „ „ 50 „	1,488	1,783
3 „ „ 4 „	792	834	50 „ „ 55 „	1,245	1,629
4 „ „ 5 „	835	769	55 „ „ 60 „	901	1,198
Total under 5 years ...	4,076	4,132	60 „ „ 65 „	805	1,045
5 years and under 10 years	3,738	3,895	65 „ „ 70 „	500	694
10 „ „ 15 „	3,860	3,877	70 „ „ 75 „	337	418
15 „ „ 20 „	3,256	3,924	75 „ „ 80 „	146	205
20 „ „ 25 „	2,954	3,618	80 „ „ 85 „	53	65
25 „ „ 30 „	2,807	3,314	85 „ „ 90 „	6	21
30 „ „ 35 „	2,421	2,934	90 „ „ 95 „	3	3

Total Number of Males	...	...	32,789
„ „ Females	...	..	37,474
Total Number of Persons	..	...	70,263

The proportion of males to females is as 1 to 1.14, or about 7 to 8.

CONDITIONS AS TO MARRIAGE.

	All Ages.	under 15 years.	15-20	20-25	25-35	35-45	45-55	55-65	65 and up-wards.
Unmarried { Males ...	19,283	11,674	3,233	2,131	1,363	498	231	83	70
Unmarried { Females	21,703	11,904	3,828	2,483	1,963	754	435	221	115
Married { Males ...	12,265	.....	23	814	3,778	3,530	2,270	1,308	542
Married { Females	12,462	.....	93	1,128	4,111	3,511	2,212	1,066	341
Widowed { Males ..	1,241	.....	.....	9	87	165	232	315	433
Widowed { Females	3,309	.....	3	7	174	454	765	956	950

BIRTHPLACE OF MALES AND FEMALES.

Where born.	Males.	Females.	Where born.	Males.	Females.
Cheshire .. ...	19,665	21,803	Islands in the British seas	23	37
Lancashire .. ..	7,735	8,847	British Colonies, &c.	71	119
London .. ..	256	303	Foreign Countries ...	99	91
Other parts of England	3,681	4,699	At Sea .. ..	5	6
Scotland ... ..	179	220			
Ireland ... ..	1,075	1,349	Total .. ..	32,789	37,474

COUNTRY OF BIRTH OF FOREIGNERS.

United States of America	25	34	France ... ..	5	6
Germany ... ..	13	7	Greece ... ..	7	
Russia ... ..	11	6	Other Europ'n Countries	9	13
Poland ... ..	8	4	Others . ...	2	2



**Occupations of Males and Females, aged 10 years and upwards in the  
Urban Sanitary District of Stockport.**

Occupations.	Males.	Females.	Occupations.	Males.	Females.
<b>I. Professional Class.</b>			<b>2. Lodging, Food, &amp;c.</b>		
Civil Servants, Police, } Army, Poor-law Officials } &c .. .. . }	215	21	Hotel Keepers, Publicans, &c.	123	78
Clerical profession .. ..	70	17	Brewers and Maltsters ..	82	4
Legal .. .. .	68	1	Wine, Spirit, & Beer Sellers	71	24
Medical and Dental ..	41	..	Milksellers .. .. .	78	10
Veterinary .. .. .	5	..	Butchers .. .. .	243	24
Nurses .. .. .	19	88	Fishmongers and Poulterers	56	10
Teachers and School Officers	83	233	Bakers and Confectioners ..	240	229
Students over 15 .. ..	72	103	Grocers .. .. .	412	131
Engineers and Surveyors ..	22	..	Greengrocers .. .. .	134	34
Artists, Photographers, } Musicians, Literary, &c. }	145	40	Other purveyors of food ..	193	123
<b>II. Domestic Class.</b>			<b>3. Textile.</b>		
Indoor servants, char- } women, washing services, } &c. .. .. . }	172	2415	Woolworkers and Dealers	41	40
<b>III. Commercial Class.</b>			Silkworkers and Dealers ..	23	46
Merchants, Agents, Bankers	302	..	Cotton and Cotton Goods } Workers .. .. . }	4493	7654
Commercial Travellers ..	129	..	Cotton and Calico Printers } and Bleachers .. }	378	107
Commercial Clerks .. ..	540	51	Threadmakers .. .. .	146	348
Railway Engine Drivers, } Porters, Clerks, &c. }	850	8	Flax and Linen Workers ..	12	52
Coachmen, Cabmen, Carters	853	1	Cotton, Linen, and Thread } Dealers .. .. . }	46	2
Messengers, Porters, } Watchmen, &c. .. }	476	10	Hempworkers and Dealers	159	51
<b>IV. Agricultural Class.</b>			Others .. .. .	204	14
Farmers, Labourers, and } those engaged about } animals .. .. . }	437	8	<b>4. Tanners, Curriers, &amp;c.</b>		
<b>V. Industrial Class.</b>			<b>5. Clothing.</b>		
<b>1. Mechanical.</b>			Hatters .. .. .	2764	1682
Printers, Lithographers, } Bookbinders, &c .. }	257	31	Tailors and Milliners ..	317	815
Machine-Makers, Fitters, } Turners, Millwrights }	554	6	Boot and Clog Makers ..	320	19
Blacksmiths .. .. .	169	..	Wigmakers and Hairdressers	70	3
Other Metal Workers ..	501	9	Others .. .. .	37	112
Boiler and Engine Tenders	195	..	<b>6. Miscellaneous.</b>		
Watch and Instrument } Makers and Dealers .. }	103	3	Chemists and Druggists ..	46	5
Housebuilding Trades ..	1650	9	Tobacconists .. .. .	81	112
Furniture Makers & Dealers	197	42	Pawnbrokers .. .. .	27	17
Carriage and Cycle Dealers	97	1	Coalworkers and Dealers ..	294	1
Brickmakers .. .. .	118	..	Labourers (various) ..	1497	31
			Other industrial occupations	801	254
			<b>VI. Unoccupied Class.</b>		
			Retired from business ..	382	218
			Pensioners .. .. .	25	..
			Living on own means ..	159	571
			Others (over 10 years) ..	2522	13329

## Statistics for 1895.

TOTAL AREA of the Parliamentary, Municipal, and County Borough, 2,200 acres.

### ESTIMATED POPULATION.

In the Registrar-General's Statistical Summary for the past year, the population of Stockport in the middle of 1895 is estimated at 75,379. This figure is, of necessity, the result of a purely mathematical calculation based upon an assumption, which may or may not be correct, that the average yearly rate of increase manifested in the decennium 1881-91 has been maintained during the period which has elapsed since the Census of 1891.

Taking the natural increase of the population, *i.e.*, the excess of births over deaths since the Census of 1891, as the measure of its growth we get the figure 72,968, thus :—

Population in 1891 .....	70,263
Excess of births over deaths from Census Day, 1891, to 30th of June, 1895 .....	2,705
Total ..	<hr/> 72,968

This method, however, is fallacious, inasmuch as the important factors of immigration and emigration are ignored. Probably, the method of estimation least open to objection is one based upon the number of inhabited houses at Midsummer, 1895, according to the enumeration made by the officials of your Rates Department at that time, *viz.*, 16,859. This total comprises 15,596 houses, which existed on Census Day, 1891, and 1,263 built since that date.

The average number of inhabitants per house at the time of the Census was 4.51. As there was some reason to believe that in new property the number of inmates per house was less than this figure, an enumeration was made recently as regards 418 new houses in various parts of the town and it was found that the average number per new house was as nearly as possible 4.1. The course adopted has, therefore, been to multiply the number of inhabited houses built prior to April, 1891, *viz.*, 15,596 x 4.51 = 70,182, and to multiply the number of houses built since that date, *viz.*,

$$1,263 \text{ by } 4.1 = 5,178$$

The estimated population for the year 1895 is therefore taken as ... 

---

75,360

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At the Census of 1891 the number of inhabited houses was 1,216. In the middle of 1895 the above-mentioned enumeration by the Rates Department showed only 1,016. This would appear to indicate that at the latter date the number of empty houses was less by 200 than in April, 1891. No correction has, however, been made in this respect, as the difference is believed to be due mainly to the fact that the census return of "uninhabited houses" included many lock-up shops, factories, and offices in which no one slept on Census night. These are excluded from the Rates Department's return and are known to approximate very closely to 200 in number.



In the following table are set forth the results of the enumeration of houses, &c., in each Ward made by the Officials of your Rates Department, to whom I am much indebted for their trouble in furnishing this information :—

RETURN SHOWING THE NUMBER OF OCCUPIED AND UNOCCUPIED DWELLINGS  
AND LOCK-UP SHOPS IN THE VARIOUS WARDS OF THE COUNTY  
BOROUGH OF STOCKPORT IN JULY, 1895.

No.	WARD.	Occupied Dwellings	Unoccupied Dwellings.	Lock-up Shops.
1	Lancashire Hill ...	1105	38	3
2	Heaton Lane ...	1388	88	36
3	Old Road ...	1453	46	8
4	Portwood ...	1519	120	6
5	St. Mary's ...	887	99	81
6	Vernon ...	1170	129	4
7	Spring Bank ...	1160	113	8
8	Hollywood ...	1257	77	6
9	Edgeley ...	1340	23	5
10	Shaw Heath ...	1179	60	7
11	St. Thomas' ...	1335	98	7
12	Hempshaw Lane ...	1001	57	4
13	Cale Green ...	1217	34	3
14	Heaviley ...	848	34	2
		16,859	1016	180

As no method of "estimating" population is quite free from the possibility of inaccuracy, and as obviously this risk must increase with the lapse of time since the date of the last Census, it is very desirable, if vital statistics are to be of real value, that the Census enumeration should be quinquennial, as in certain Continental and American countries, instead of decennial as at present. In the meantime it is important that a careful yearly enumeration of both the *occupied* and *unoccupied* houses in each Ward of the Borough be made. Indeed, this will be essential if in future the vital statistics of your re-arranged Wards are to be efficiently presented to you, and as the annual survey of the Borough for Poor Law purposes is to be made by the officials of your Rates Department, this valuable information ought to be obtainable with comparatively little trouble.

### Marriages.

During the year 1895 the number of marriages was 680, the marriage rate being equal to 18.04 per 1,000 persons living, as compared with a rate of 16.7 for the year 1894, and of 13.2 for 1893. The Registrar-General gives the following marriage-rates :—

England and Wales 1895	...	15.0	per 1000 persons living	(a)
London	,,	17.1	,,	(b)

(a) and (b) See footnote on page 12.

## Births.

The total number of births registered was 2,456 according to the weekly returns supplied by the sub-registrars. Of these 111, or 4·5 per cent., were illegitimate. The birth-rate was equal to 32·5 per 1,000 persons living, as compared with 31·3 for the year 1894, and with an average rate of 33·4 for the decennium 1885-1894. The highest rate (47·2) was reached in Edgeley Ward, and the lowest (23·5) in Shaw Heath.

The birth-rate for the whole of England and Wales for the year 1895 was 30·3 per 1,000 of the population (*a*) ; for the 33 Great Towns the birth-rate was 31·3 (*c*), and the 67 Other Large Towns 31·1 (*d*).

## Deaths.

The total number of deaths registered was 1941, according to the weekly returns supplied by the sub-registrars, this number being greater by 507 than that registered during 1894. Excluding 71 deaths (chiefly in the Workhouse and Infirmary) of persons not usually resident within the Borough, the deaths numbered 1870, and the death-rate from all causes per 1,000 persons living was 24·8, as compared with a rate of 18·7 for the year 1894, and of 24·7 for the decennium 1885-1894. The highest death-rate (34·5) was in St. Mary's Ward, and the lowest (13·3) in Cale Green.

The following table gives the annual death-rate per 1,000 (taken from the Registrar-General's Reports) for

	POPULATION.	DEATH-RATE.
England and Wales	30 millions	18·7 ( <i>e</i> )
„ „ Rural .....	10 „ .....	17·0 ( <i>f</i> )
„ „ Urban .....	20½ „ .....	19·5 ( <i>f</i> )
The Thirty-Three Great Towns ....	10½ „ .....	20·7 ( <i>g</i> )
The Sixty-Seven Other Large Towns ...	3½ „ .....	18·7 ( <i>h</i> )

The death-rate (24·8) for the year under notice, when compared with the phenomenally low death-rate for 1894, at first sight seems exceedingly heavy, but on contrasting it with that of the preceding decennium (which included the highly favourable year 1894) it is seen that the death-rate for 1895 is practically the same as the average death-rate for the previous ten years. To those interested in the sanitary well-being of the Borough, it may year 1895, as compared with 1894, was not confined to Stockport, but was general throughout the kingdom, as the following figures clearly show :— also, possibly, be comforting to learn that **the heavy relative mortality of the year 1895, as compared with 1894, was not confined to Stockport, but was general throughout the kingdom, as the following figures clearly show :—**

	England and Wales.	33 Great Towns.	67 Other Large Towns.	Wigan.	Rochdale.	Bolton.	Blackburn.	Preston.
1894	16·6	18·1	16·0	19·4	17·4	18·8	17·9	20·8
1895	18·7	20·7	18·7	23·0	23·0	24·0	24·3	23·9

*a* Registrar-General's Quarterly Return, No. 190, page xii. *b* Registrar-General's Annual Summary, page vi. *c* Registrar-General's Annual Summary, page iii. *d* Registrar-General's Annual Summary, page xvi. *e* Quarterly Return, No. 189, page x. *f* Quarterly Return, No. 189, page xi table 3. *g* Annual Summary, 1895, page iii. *h* Annual Summary, 1895, page xvi.





# SUMMARY OF THE VITAL AND MORTAL STATISTICS OF THE BOROUGH AND EACH OF ITS WARDS FOR THE YEAR 1895.

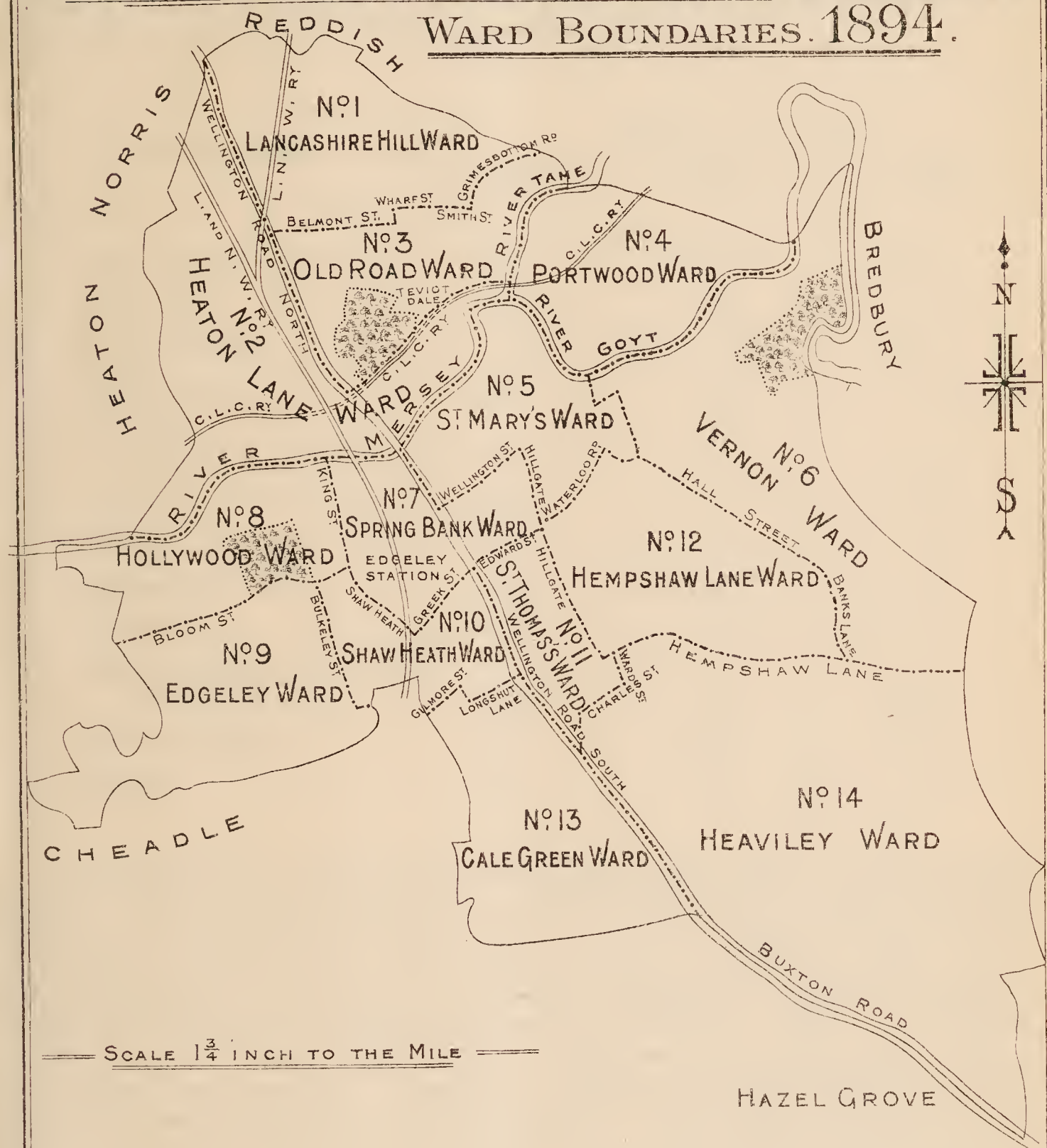
WARD.	Acre- age.	Estimat- ed popula- tion.	Per- sons per acre.	No. of Births regis- tered.	Birth- rate.	Cor- rect'd de'ths *	Cor- rect'd Death rate.	No. of de'ths under 1 year of age *	Inf'nt mor- tality rate per 1000 births	No. of de'ths from 7 prin- cipal Zy- motic dis- eases†	Zy- motic Death rate per 1000.	Zy- motic death rate per 1000. (ex- clud- ing Diar- rhœa)	No. of de'ths from Diar- rhœa. *	Death rate from Diar- rhœa per 1000.	No. of de'ths from Con- sump- tion. *	Death rate from Con- sump- tion per 1000.	No. of de'ths from Other Lung Dis- eases. *	Death rate from Other Lung Dis- eases per 1000.
LANCASHIRE HILL .	145	4,930	34.0	173	35.1	103	20.8	35	202	19	3.8	2.4	7	1.4	9	1.8	20	4.05
HEATON LANE ... ..	223	6,242	27.9	165	26.4	165	26.4	58	351	35	5.6	2.2	21	3.3	14	2.2	35	5.6
OLD ROAD ... ..	114	6,528	57.2	209	32.0	159	24.3	52	248	33	5.05	2.7	15	2.2	18	2.7	35	5.3
PORTWOOD ... ..	130	6,802	52.3	260	38.2	184	27.0	60	230	30	4.4	2.6	12	1.7	10	1.4	66	9.7
ST. MARY'S ... ..	91	3,990	43.8	123	30.8	138	34.5	29	235	18	4.5	2.0	10	2.5	14	3.5	39	9.7
VERNON ... ..	236	5,204	22.0	149	28.6	117	22.4	50	335	18	3.4	1.7	9	1.7	4	0.7	37	7.1
SPRING BANK ... ..	81	5,220	64.4	161	30.8	155	29.6	43	267	25	4.7	2.4	12	2.2	20	3.8	35	6.7
HOLLYWOOD... ..	97	5,612	57.8	205	36.5	141	25.1	45	219	26	4.6	2.4	12	2.1	11	1.9	37	6.5
EDGELEY ... ..	184	5,860	31.8	277	47.2	117	19.9	35	126	22	3.7	2.2	9	1.5	14	2.3	21	3.5
SHAW HEATH ... ..	61	5,300	86.8	125	23.5	163	30.7	35	280	21	3.9	1.3	14	2.6	19	3.5	34	6.4
ST. THOMAS' ... ..	53	6,006	113.3	180	29.9	173	28.8	46	255	42	6.9	3.4	21	3.4	11	1.8	36	5.9
HEMPSHAW LANE ..	146	4,490	30.7	165	36.7	110	24.4	45	272	19	4.2	1.7	11	2.4	6	1.3	20	4.4
CALE GREEN .. ..	145	5,400	37.2	140	25.9	72	13.3	16	114	11	2.03	0.9	6	1.1	7	1.2	15	2.7
HEAVILEY ... ..	494	3,776	7.6	124	32.8	73	19.3	19	153	13	3.4	2.1	5	1.3	5	1.3	20	5.2
STOCKPORT BOROUGH	2200	75,360	34.2	2456	32.5	1870	24.8	568	231	332	4.40	2.2	164	2.1	162	2.1	450	5.9

\* Deaths of Stockport residents in the UNION WORKHOUSE, INFIRMARY, and ISOLATION HOSPITAL are here referred to the Wards in which they lived.  
Deaths within the Borough of Non-residents from out-townships are excluded. (See following table.)  
† The "seven principal Zymotic diseases" are, small-pox, measles, scarlet fever, diphtheria and membranous croup, whooping cough, fever typhoid, and continued), and diarrhœa



# COUNTY BOROUGH OF STOCKPORT.

## WARD BOUNDARIES. 1894.



JOHN ATKINSON, A.M. INST. C.E.  
BOROUGH SURVEYOR.





As the year 1894 was from a health point of view exceptionally favourable, the death-rates throughout the country being the lowest on record, a strict comparison of the factors of mortality in 1894 and 1895 alone might give rise to inaccurate inferences. The year 1893 was, on the other hand, an unusually trying one, and, therefore, the following tabulation of the more prominent mortal statistics of the *three* years mentioned will conduce to a more correct appreciation of their respective value :—

CAUSE OF DEATH.	NUMBER OF DEATHS.		
	1895	1894	1893
Seven Chief Zymotics ...	332	118	375
Smallpox ...	—	2	2
Scarlet Fever ...	6	6	11
Diphtheria ...	27	16	32
“ Fevers ”			
(Typhoid and Continued)	20	8	49
Measles ...	84	1	37
Whooping Cough ...	32	3	33
Influenza ...	16	8	3
Diarrhœa ...	167	96	202
Lung Diseases (including Phthisis) ...	629	457	526
Heart Disease ...	140	112	112
Injury ...	32	33	49

An examination of these figures reveals as regards 1895 a very notable increase in the number of deaths from respiratory disease, and significant evidence of the mischief wrought by the epidemic of measles from which the younger members of the community suffered ; in addition, there was a serious prevalence of other zymotic disease, (diphtheria, typhoid, whooping cough, influenza, and diarrhœa) far exceeding that of 1894, and almost equalling the records of 1893, except in regard to the number of deaths from typhoid and diarrhœa. Finally, a material increase is apparent in the number of deaths referred to “heart disease.” The most prominent factors of the death-rate of 24·8 are, in the order of their respective importance, (1) Lung Diseases, including Consumption ; (2) Diarrhœal Diseases of young children ; (3) Infantile Atrophy, Food-Marasmus, or Wasting, and (4) Heart Disease. The total number of deaths (570) of children under 1 year of age, chiefly from (1) (2), and (3) of the above-named causes, added 7·5 per 1,000 to the death-rate. These causes of infant mortality are undoubtedly capable of being largely influenced in their prevalence by unwholesome surroundings and by due observance of the laws of health. We are, therefore, I believe, justified in hoping that with advancing sanitation and a more widely diffused knowledge of the elementary principles of hygiene, infant mortality may eventually cease to inflate your death-rate to the extent that it is at present the case.

## Age and Sex in relation to the Year's Mortality.

The number of deaths amongst infants under one year of age was 570, constituting 29·3 per cent. of the total number of all deaths, as compared with the figures 442 and 30·8 for the year 1894. This mortality is very excessive, and I shall again have occasion to refer to it. The deaths of children between 1 and 5 years numbered 295, or 15·2 per cent. of all registered, the mortality of the first quinquennium amounting to 44·5 per cent. of that at all ages. The deaths in the 20-years age-period of 5—25 were only 134, being 6·9 per cent. of the total mortality; 618 deaths, or a percentage on the total of 31·8, occurred between 25 and 65, whilst above 65 the deaths registered were 324, being equal to 16·6 per cent. of the year's mortality.

It is apparent from the foregoing figures that mortality differs widely at different ages. It also differs considerably in the two sexes, being higher amongst males at nearly all ages. General death-rates calculated without regard to the age and sex constitution of a community possess, accordingly, little *comparative* value, as it is clear that a community containing, for example, a larger than average proportion of females and of young adults, and a smaller proportion of males and old people, will almost necessarily show a lower general death-rate than a town in which the average age and sex constitution prevails, even if both towns be, in the words of Dr. Ogle, "on a perfect equality with each other as regards their climate, their sanitary arrangements, their closeness of aggregation, as also the habits and occupations of their inhabitants." I have therefore prepared the following

TABLE SHOWING THE AGE AND SEX, CONSTITUTION OF THE POPULATION,  
AND THE REGISTERED MORTALITY OF STOCKPORT FOR THE YEARS  
1891 (CENSUS) AND 1895 (ESTIMATED).

1891.

Age Periods.	Persons.		Males.		Females.	
	Census.	Deaths.	Census.	Deaths.	Census.	Deaths.
All Ages ... ..	70263	1884	32789	984	37474	900
Under 1 ... ..	1824	522	888	300	936	222
1 and under 5... ..	6384	305	3188	153	3196	152
Total under 5 ... ..	8208	827	4076	453	4132	374
5 and under 15 ... ..	15370	78	7598	38	7772	40
15     "     25 ... ..	19873	63	9017	35	10856	28
25     "     45 ... ..	14267	263	6614	132	7653	131
45     "     65 ... ..	10094	356	4439	175	5655	181
65 and upwards ... ..	2451	297	1045	151	1406	146



1895.

Age Periods.	Persons.		Males.		Females.	
	Estim't d Pop'lat n	Deaths.	Estim't d Pop'lat n	Deaths.	Estim't d Pop'lat n	Deaths.
All Ages ... ..	75360	1870	35167	899	40193	971
Under 1 ... ..	1956	568	952	308	1004	260
1 and under 5 ... ..	6847	294	3419	136	3428	158
Total under 5 ... ..	8803	862	4371	444	4432	418
5 and under 15 ... ..	16495	60	8159	28	8336	32
15       ,,   25 ... ..	21295	67	9652	32	11643	35
25       ,,   45 ... ..	15312	217	7104	92	8208	125
45       ,,   65 ... ..	10826	360	4760	165	6066	195
65 and upwards ... ..	2629	304	1121	138	1508	166

From the foregoing and similar data has been constructed the following

TABLE EXHIBITING, FOR THE YEARS 1891-4 INCLUSIVE, THE MORTALITY

PER EACH 1000 PERSONS LIVING IN STOCKPORT AT ALL AGES,

WITH SIMILAR INFORMATION IN REGARD TO THE PERSONS

OF EACH SEX LIVING IN THE SAME AGE GROUPS.

		All ages	Under 1	1 to 5	Under 5	5 to 15	15 to 25	25 to 45	45 to 65	65 and Upwards
1891	{ Persons .....	26.8	286.1	47.7	100.7	5.07	3.1	18.4	35.2	121.1
	{ Males.. .....	30.01	337.3	47.9	111.1	5.0	3.8	19.9	39.4	144.4
	{ Females.....	24.01	237.1	47.5	90.5	5.1	2.5	17.1	32.0	103.8
1892	{ Persons .....	22.6	250.8	28.7	77.9	4.4	3.2	14.3	33.3	113.6
	{ Males . .....	25.6	304.0	32.1	91.3	5.4	3.3	16.09	37.7	118.4
	{ Females.....	20.08	200.4	25.2	64.8	3.5	3.1	12.8	29.9	110.09
1893	{ Persons .....	23.9	277.6	38.0	91.1	4.6	3.7	15.9	29.4	106.2
	{ Males.....	25.3	317.3	40.5	100.7	5.4	3.9	16.7	27.9	105.5
	{ Females . . .	22.6	239.8	35.5	81.7	3.9	3.6	15.2	30.6	106.8
1894	{ Persons .....	18.7	229.9	17.6	64.7	3.4	2.9	13.6	23.4	101.1
	{ Males.....	20.09	277.2	19.4	75.5	3.8	2.3	13.8	22.5	104.6
	{ Females ....	17.6	185.07	15.8	54.06	2.9	3.4	13.4	24.1	93.5
1895	{ Persons ... ..	24.8	290.3	42.9	97.9	3.6	3.1	14.1	33.2	115.6
	{ Males.....	25.5	323.5	39.7	101.5	3.4	3.3	12.9	34.6	123.1
	{ Females... ..	24.1	258.9	46.08	94.3	3.8	3.0	15.2	32.1	110.7

Perhaps the most obvious features of this table are the enormously high death-rates in the first year and in the first five years of life, the slight mortality between the ages of 5 and 25, and the marked excess of deaths amongst males in almost every age period, but especially during the first quinquennium. The only exception to this latter condition is in the 1—5 years age-period during 1895, in which the male mortality was 39.7, whilst the female rate was 46.08.

The deaths which occurred within the district of persons not belonging thereto may be thus tabulated :—

Where from.	DIED.			Where from.	DIED.		
	Work-house.	In-firmary.	Else-where.		Work-house.	In-firmary.	Else-where.
Hyde ... ..	18	—	—	Torkington ...	1	—	—
Reddish.....	6	3	—	Gee Cross .....	1	—	—
Werneth .....	3	—	—	Northenden ...	1	—	—
Bosden .....	3	—	—	Middleton .....	—	1	—
Macclesfield ...	2	—	—	Cheadle Hulme	—	1	—
Marple .....	2	2	—	Hazel Grove ..	—	1	—
Bramall.....	1	1	—	New Mills .....	—	1	—
Warrington ...	1	—	—	Wilmslow .....	—	2	—
Nantwich .....	1	—	—	Mellor .....	—	1	—
Bredbury .....	1	—	—	Halifax ... ..	—	1	—
Salford .....	1	—	—	Heaton Mersey	—	1	—
Manchester ...	1	1	1	Altrincham ...	—	1	—
Newton .....	1	—	—	Bollington ...	—	1	—
Heywood .....	1	—	—	Brinnington ...	—	1	—
Pendleton .....	1	—	—	Newton Heath	—	—	1
Cheadie .....	1	2	—	Bolton .....	—	—	1

TOTALS : In Workhouse 47, in Infirmary 21, Elsewhere 3.

The deaths in the public hospitals of persons belonging to Stockport exhibit the following ward distribution :—

Where from.	Died in			Where from.	Died in		
	Work-house.	In-firmary.	Isolation Hospital		Work-house.	In-firmary.	Isolation Hospital
Lancashire Hill	2	1	1	Hollywood .....	8	6	—
Heaton Lane...	8	3	1	Edgeley ... ..	4	2	1
Old Road .....	7	4	—	Shaw Heath....	48	—	—
Portwood .....	21	4	—	St. Thomas' ...	13	10	3
St. Mary's.....	25	2	—	Hempshaw Lane	2	1	1
Vernon .... ..	8	2	1	Cale Green .....	—	1	—
Spring Bank ...	22	4	—	Heaviley .....	2	—	2

TOTALS : In Workhouse, 170 ; in Infirmary, 40 ; in Isolation Hospital 11.

For purposes of comparison with the vital statistics of Stockport, I have excerpted from the Registrar-General's return for fourth quarter of 1895, p. ix., and from the Annual Summary for 1895, p. xxv., &c., the following figures relating to England and Wales, the two groups of "large towns," and to eleven individual northern factory towns, the general conditions of life in which are somewhat similar, and which probably do not differ greatly in regard to age- and sex-constitution of their population.



1895.	Birth-Rate.	Death-Rate.	Zymotic Death-Rate	Deaths of Infants under 1 year to 1000 births.
England and Wales.....	30·3	18·7	2·14	161
The 33 Great Towns .....	31·3	20·7	2·84	182
The 67 Other Large Towns	31·1	18·7	2·40	176
St. Helens .....	39·9	21·3	3·32	184
Wigan .....	38·8	23·0	2·65	191
Warrington .....	36·7	21·6	4·79	197
Bury .....	26·1	22·8	2·95	205
Ashton-under-Lyne ... ..	30·0	23·2	4·57	226
Rochdale .....	23·8	23·0	2·44	178
Bolton .....	32·9	24·0	4·45	212
Blackburn ... ..	30·6	24·3	5·63	236
Preston .....	33·4	23·9	3·77	248
Huddersfield . .....	21·7	16·9	1·20	158
Halifax .....	23·4	19·3	1·30	158
<b>Stockport .....</b>	<b>32·4</b>	<b>24·8</b>	<b>4·40</b>	<b>231</b>

### Uncertified Deaths.

There were 25 uncertified deaths during the year, of which 10 occurred in Portwood, 8 in Vernon, 3 in Heaton Lane, 2 in Lancashire Hill, 1 in Old Road, and 1 in Spring Bank.

### Coroner's Inquests and Certificates.

85 inquests were held during the year, viz , 74 by Mr. Coroner Newton and 11 by Mr. Coroner Price. In addition 22 other cases were inquired into for Mr. Newton, of which 3 were certified by him. Eight such cases were investigated for Mr. Price, and 5 of these were certified by him. The following is a summary of the verdicts resulting from the 85 inquests held :—

Murder.....	1	Excessive Drinking .....	2
Suicide.. ..	8	Natural Causes .....	40
Accidental Death .....	28	Other Causes . .....	4
Suffocated in Bed, whilst with parents or others	2		

## Infantile Mortality.

The deaths of children under 1 year of age were 570, or nearly 29·3 per cent. of the total number of deaths at all ages during the same period. The number of births was 2,456, and consequently infantile mortality was at the rate of 231 per 1,000 births, as compared with a rate of 192 in 1894, and of 225 in 1893. The following figures are taken from the Registrar-General's returns for purpose of comparison :—

DEATHS UNDER 1 YEAR PER 1000 BIRTHS.					
	1893		1894		1895
	—		—		—
England and Wales ...	159	.....	137	.....	161
33 Great Towns ...	181	.....	152	.....	182
67 other Large Towns ...	—	.....	142	.....	176

The infantile mortality rate (231) in your borough is therefore far above the average, and in point of fact is again specially mentioned by the Registrar-General as being the highest but two recorded in any of "The Sixty-seven Other Large Towns" those with higher rates being Merthyr Tydfil (232) and Longton (240). You will also observe that it holds a somewhat similar unenviable position in regard to the 11 northern factory towns whose statistics I have tabulated on page 17. In my previous Annual Reports I dealt at some length with the causes of this potent factor of your general death-rate, and in continuation of that inquiry have extended, by the inclusion of last year's figures, the tabulated analysis of the causes of infantile mortality then submitted to you, the result being to confirm and accentuate the deductions before recorded. As was then pointed out, the chief causes of infantile mortality are, in the order of their importance, evidently these :—

- (1) Prematurity and Want of Vitality at Birth.
- (2) Diseases of the Respiratory Organs.
- (3) Diarrhœal and Digestive Disorders, mainly due to errors of diet and insanitary conditions of residence.

Many believe that the following are also important factors amongst those responsible for the evil under consideration :—

- (4) The high birth-rate and the early improvident marriages so common in factory towns.
- (5) Administration of narcotics.
- (6) Infant life insurance.



# Analysis of the Causes of Infant Mortality in Stockport.

FOR THE 7 YEARS—1889 TO 1895 INCLUSIVE.

CAUSES.	1st day.	2nd day.	3rd day.	4th day.	5th day.	6th day.	7th day.	1st week.	2nd week.	3rd week.	4th week.	Under 1 month.	1 month, and under 2	2 months, and under 3	3 months, and under 4	4 months, and under 5	5 months, and under 6	6 months, and under 7	7 months, and under 8	8 months, and under 9	9 months, and under 10	10 months, and under 11	11 months, and under 12	TOTAL.	
Premature birth and congenital malformation ... ..	94	18	15	10	7	2	3	149	25	16	5	195	7	9	3	4	2	4	3	1	1	.	2	231	
Debility, low vitality, inanition, asthenia, marasmus, atrophy.	81	35	26	6	8	7	9	172	52	68	22	314	119	94	79	56	41	22	27	14	16	14	9	805	
Respiratory diseases (including pulmonary tuberculosis) ...	8	1	1	...	1	..	...	11	12	9	6	38	71	74	85	83	81	65	77	62	58	82	53	829	
Diarrhœa and other gastro-intestinal maladies ... ..	...	...	..	..	...	2	2	4	5	12	9	30	64	78	81	81	82	40	50	40	33	15	16	610	
Tabes Mesenterica and tubercular peritonitis ... ..	...	...	..	...	...	...	..	...	...	..	...	...	4	2	6	9	9	12	4	4	4	4	1	59	
Dentition ... ..	...	...	..	..	..	...	...	...	...	...	...	...	...	1	1	6	15	17	22	20	14	17	16	129	
Convulsions and nervous diseases	20	15	12	8	7	2	2	66	15	16	4	101	44	51	37	28	28	13	12	7	12	13	10	356	
Meningitis (including Tubercular)	...	...	...	...	...	...	..	..	..	..	...	...	3	11	7	16	14	14	15	10	11	3	8	112	
Zymotic diseases— w.—Whooping cough. d.—Diphtheria. c.—Membranous croup. sc.—Scarlet fever. m.—Measles. e.—Erysipelas.	..	..	..	..	...	...	...	...	...	1 E	1.W 1.D	2.W 3.W 1.D 1.E	4.W 1.E	9.W	1.W 2.M	8.W 2.M 1.E	9.W 1.Sc 3.M 1.E	14.W 7.M	7.W 1.D 1.C 7.M	12.W 1.D 1.C 1.Sc 12.M	9.W 2.D 1.C 21.M	10.W 1.C 20.M	14.W 2.C 17.M	100.W 5.D 6.C 4.Sc 91.M 4.E	210
Suffocation =s. Injury =I. Overlain =o.	1.I 1.s	1.I	...	1.s			...	2.s 2.I	1.s 1.I	...		3.s 3.I	5.s 3.o	3.s 1.o	2.s 1.I 1.o	2.s	1.o		1.I	1.s	...	1.s	..	17.s 5.I 6.o	28
Other causes*	5	3	...	...	..	3	1	12	7	4	4	27	18	15	12	6	7	5	5	4	7	3	1	110	
TOTALS ...	210	73	54	25	23	16	17	418	119	127	52	716	343	348	318	302	294	213	232	190	189	183	151	3479	

TOTAL NUMBER OF BIRTHS DURING YEARS 1889 TO 1895 INCLUSIVE 16,215.

\* DEATHS FROM "OTHER CAUSES" included *inter alia*:—26 inherited syphilis, 17 during first three months: 9 icterus, 6 being in first month: 5 atelectasis: 3 intussusception, 5th, 7th, and 7th months: 3 tubercular peritonitis, 5th and 9th months; 1 volvulus, 5th month: 1 strangulated hernia, 10th month: 1 prolapsus recti, 10th month: 1 congenital occlusion rectum, 3rd week: 1 endocarditis (verified p.m.), 1st month: 1 hæmorrhage umbilical cord, 2nd day: 3 inflammation umbilicus, 1st month: 1 gastro-intestinal hæmorrhage, 6th day: 1 lympho-sarcoma (verified p.m.), 4th month.





It is a significant fact that the death-rate amongst illegitimate infants is double that amongst infants born in wedlock, being 442, as compared with 221 per 1000 births. As summarised in previous reports, the remedial measures which suggest themselves in regard to infant mortality include the following :—

- (1) The removal of preventable causes of prematurity, and of the want of vitality of infants at birth, *e.g.*, by prohibiting the employment in mills of women advanced in pregnancy.
- (2) The prevention of subsequent maternal neglect by limiting *where practicable* the employment of nursing mothers in factories, and by diffusing instruction in the elements of infant hygiene.
- (3) The abatement of insanitary conditions of residence.
- (4) The extension of the provisions for the Infant Life Protection Act, 1872, to those women who receive even one child which is not their own to feed and attend to during its mother's absence at work. This would necessitate registration, supervision and cleanliness, and would tend to ensure better feeding and general care.

### Zymotic Disease.

As was already stated, there was during 1895 a serious prevalence of zymotic disease in the Borough, considerably exceeding that of 1894, and approaching the figures of 1893 except in regard to typhoid and diarrhœa. The number of cases of *notifiable* zymotic disease reported under the Notification Act of 1889 was relatively small, being 344, as compared with 421 in 1894, 683 in 1893, and a yearly average of 401 since the enforcement of the Act in February, 1890. The great excess over the zymotic records of 1894 is, therefore, mainly attributable to the marked incidence of non-notifiable zymotics, especially diarrhœa, measles, and whooping cough, from which the Borough had been comparatively free in the previous year. Influenza was returned as a cause of death in 16 cases, 12 of which occurred in the Spring months.

The death-rate from the "Seven Chief Zymotic Diseases"\* was equal to 4·4 per 1,000 persons living (as compared with 1·64 in 1894 and 4·8 in 1893), and of this figure diarrhœa was responsible for 2·1. The same rate for England and Wales was 2·14, for the 33 Great Towns 2·84, and for the 67 Other Large Towns 2·40.

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\* Smallpox, measles, scarlet fever, diphtheria, whooping cough, "fever" (typhus, typhoid, and continued), and diarrhœa.

## INFECTIOUS DISEASE (NOTIFICATION) ACT, 1889.

### CASES REPORTED DURING THE YEAR 1895.

	Small pox.	Scar- let Fever	Diph- theria	Mem- branous Croup	Typhus Fever	Typhoid Fever	Continu- ed Fever	Re- laps- ing.	Puer- peral Fever	Chol- era	Erysi- pelas
January	..	7	1	1	...	2	...	...	...	...	1
February	...	9	...	1	...	4	...	...	1	...	3
March ...	...	2	2	2	...	...	...	...	...	...	3
April ....	...	10	2	...	...	1	1	...	2	...	7
May ...	...	5	...	2	...	3	...	...	2	...	1
June .....	...	14	5	2	...	2	...	...	1	...	1
July .....	...	13	...	1	...	4	...	...	1	...	1
August ...	...	12	4	2	...	5	...	...	1	...	1
September	...	6	4	2	...	8	...	...	...	...	1
October	...	39	6	5	...	20	...	...	..	...	4
November	2	30	6	4	...	14	...	...	...	...	2
December	...	23	5	2	...	8	2	...	...	...	6
Totals ...	2	170	35	24	...	71	3	...	8	...	31

Grand Total..... 344.

### Smallpox.

Two cases of smallpox occurred in the month of November. The first patient was a mill operative, aged 39, who sickened on 26th October, with the symptoms characteristic of invasion by this disease, a papular rash appearing on 29th October, the spots showing first on the forehead and wrists. He returned to work on 31st October, was noticed and sent home by his overlooker on 7th November and was then found to be suffering from modified smallpox. The other case was a son, aged 13, of the first patient, and his symptoms and illness were of the mildest nature. He presented two good primary vaccination marks, each about the size of a sixpenny piece.

Prompt and thorough measures of isolation and disinfection were adopted, the inmates of neighbouring houses, and the patients' fellow-workers were visited, inspected, and warned; free re-vaccination with calf-lymph was offered by handbill and otherwise to all who had been exposed to infection, and these latter individuals were kept under observation for at least a fortnight.



Careful and persistent inquiry as to the source of infection failed to throw any light on the origin of the first case. The sufferer protested that he had not been out of the town for months, and though it was not possible to follow all his movements with certainty, I could obtain no history of contact with any infected person. No further cases occurred.

### Vaccination.

The following figures relate to primary vaccination of infants during the decennium 1885-1894 in the three registration districts of Stockport which, include, in addition to the Borough, portions of Heaton Norris and Brinnington outside the Borough :—

Year ending 31st Decembr	No. of Births registered	Success-fully Vaccinated.	Insu'cep-tible of Vaccination.	Had Smallp'x	Dead Unvaccinated.	Postponement by Medical Certificate.	Removal to districts the Vaccination Officer of which has been duly apprised.	Removal to places unknown or which cannot be reached and cases not having been f'nd	Un-accounted for.
1885	2465	1985	4	...	333	9	14	87	33
1886	2637	2146	8	...	318	17	13	97	38
1887	2603	2156	6	1	293	22	18	72	35
1888	2520	1939	7	...	359	23	27	115	50
1889	2644	2127	12	...	318	31	21	107	28
1890	2551	1917	9	...	392	35	22	125	51
1891	2700	2035	5	...	377	46	26	142	69
1892	2644	1935	3	..	362	81	26	169	68
1893	2682	1901	14	...	397	33	33	144	160
1894	2690	1890	15	...	403	64	25	166	127
Totals.	26136	20031	83	1	3552	361	225	1224	659

I am indebted to the courtesy of C. F. Johnson, Esq., Solicitor, Clerk to the Guardians, for these figures, which differ as regards the years 1893 and 1894 from those published in the last report, inasmuch as the figures furnished to me were the *preliminary* and not the *completed* returns, the latter being as in the above table. I am glad to be able to record that, in consequence of a communication from the Sanitary Committee, the Guardians have called upon the vaccination officers for an explanation of the unsatisfactory nature of the returns, and further action will no doubt be taken by them.

The figures for 1895 do not appear, as the final returns will not, I understand, be received till February, 1897.

## Enteric or Typhoid, and Continued Fever.

Seventy-one cases of typhoid and 3 of continued fever were reported during the 12 months, as compared with an annual average of 113 cases of typhoid and continued fever during the previous 5 years. Twenty deaths resulted, representing an annual death-rate per 1,000 persons living of 0·2, as compared with 0·2 (from "fevers") for the 33 Great Towns, and 0·21 for the 67 Other Large Towns. During the decennium 1885-1894 the average annual rate for your Borough was 0·326.

In my previous annual and special reports I have discussed at considerable length the causes which appear to make typhoid fever endemic in Stockport, and notably in certain districts which consist geologically of sponge-like sand or gravel overlying a more or less basin-shaped layer of clay. First and foremost is the existence of the enormous foul leaky privy-pits which honeycomb the soil, saturate it with excremental filth, and cause in warm weather poison-laden and death-dealing emanations of polluted ground air. In addition, when the privy-pits are made the receptacle of the discharges of a typhoid patient the contained nightsoil acquires an infectious quality and the emanations therefrom are capable of causing the disease in those who inhale them. The experience of 1895 merely confirms the proofs afforded during the previous years of the truth of these statements, and so long as the midden privy system exists in your town the occurrence of every hot dry summer will, in my opinion, be a cause of serious anxiety and possibly of much illness and mortality.

Soil pollution by leakage of sewage from defective drains will, doubtless, have a similar baneful effect to that resulting from leaking privy pits, and this fact accentuates the importance of insisting on *really water-tight* drain joints which, as far as my experience goes, are almost unknown in the Borough.

## Diarrhœa.

167 deaths were registered from diarrhœa during the twelve months, representing a mortality per 1,000 of 2·1, as compared with 1·2 for the 33 Great Towns, and 1·12 for the 67 Other Large Towns. Stockport is included in the latter category, and, in regard to mortality from this cause, stands sixth highest on the list.

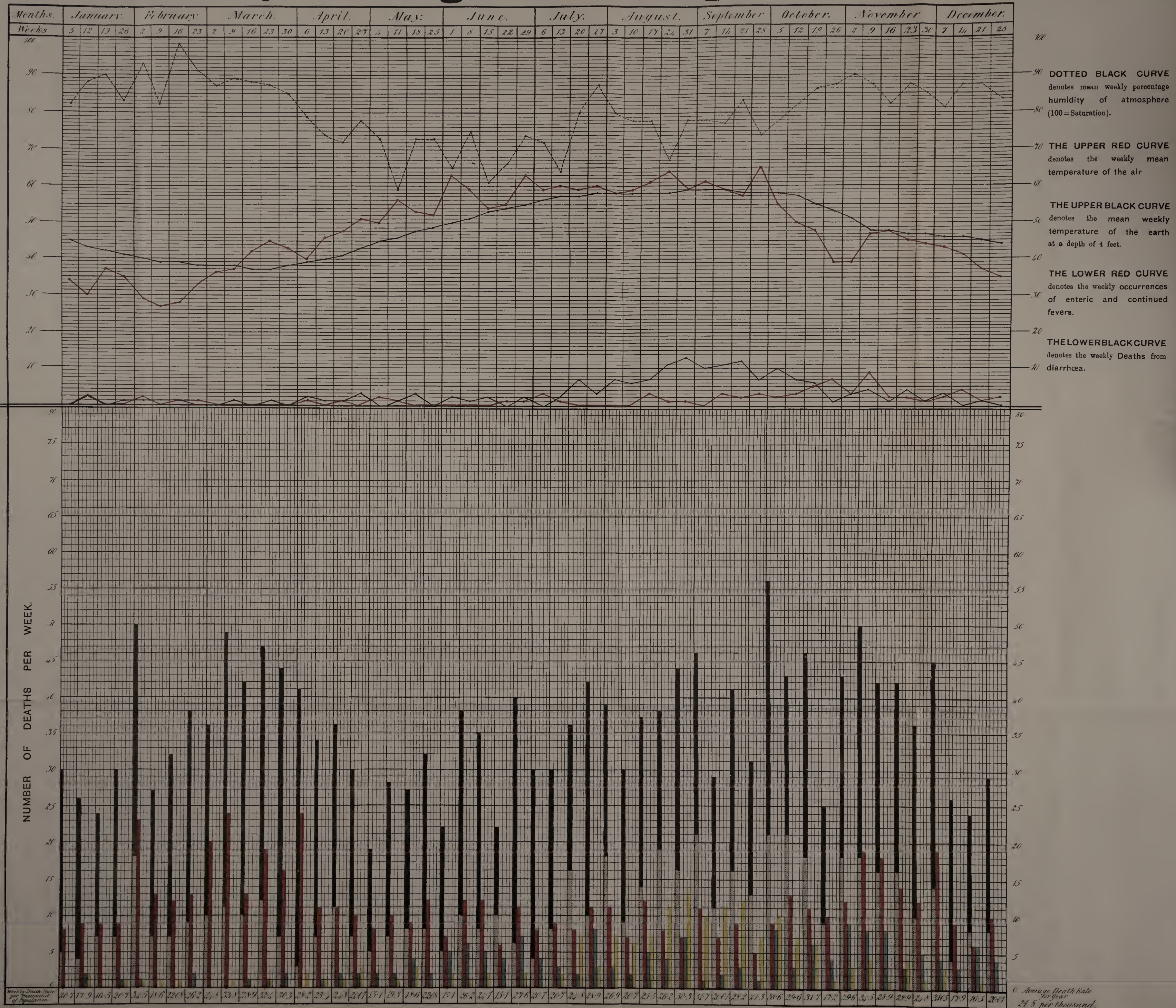
As usual, the incidence of the disease is almost solely upon children under five years of age, and the question is of such importance to the death-rate of your borough that I think it well to again point out that the predisposing causes of infantile diarrhœa include (1) early weaning and injudicious hand-feeding, (2) insanitary conditions, such as (a) soil pollution by slops, leakage from middens and drains, &c., (b) use of "made ground" containing excremental matters for building sites, (c) deficiency of air space and ventilation about dwellings when crowded on area or built back-to-back. The essential cause of the disease is believed to be a virulent chemical poison produced by a micro-organism which is capable of becoming air-borne, but which resides ordinarily in the superficial layers of the soil. In the organic matter of certain soils, and in food (inside as well as outside of the human body) this organism finds, especially under favourable conditions of temperature, material for its development and multiplication, and therefore for the production of the chemical poison referred to. It is, of course, well known that diarrhœa mortality is greatest in hot weather. Dr. Ballard has, however, shown that this increased mortality bears little relation to the







# County Borough of Stockport, 1895.





temperature of the air. He found that it commences when the temperature of the *earth* at a depth of 4 feet registers about 56° F., and that in its further rise and subsequent decline it closely corresponds with the movements of the 4-foot earth thermometer. The latter falls much more slowly and gradually than the atmospheric temperature, and hence summer diarrhoea may continue into the fourth quarter of the year, long after the temperature of the air has fallen below 56° F.

On comparing the coloured chart accompanying this report with that for 1894, it will be seen during 15 weeks of 1895, viz., from July 7th to October 12th, the 4-foot earth thermometer registered not less than 56° F., whereas during 1894 the same earth temperature was only maintained for about five weeks, viz., from July 22nd to August 25th. It will be further seen (vide, yellow columns) that during the 15 weeks from July 7th to October 12th, 1895, no less than 117 diarrhoea deaths were recorded, the number during the same period of 1894 being 54, or less than one-half. Similar results were shown by a comparison of the 1893 and 1894 charts, and thus Dr. Ballard's observations are closely borne out by the experience of Stockport during the years 1893, 1894 and 1895.

### Measles.

84 deaths were recorded from measles during the year, the epidemic being widespread and persistent. This very heavy mortality represents a rate of 9·5 per 1000 persons living under 5 years of age, and a rate of 1·1 per 1,000 persons living at all ages, as compared with 0·53 in the 33 Great Towns, and 0·37 in the 67 Other Large Towns. On the other hand, several northern manufacturing towns appear to have suffered as much or more than Stockport, e.g. : Blackburn 2·54, Warrington 1·89, and Barnsley 1·44.

In the following statement are set forth the number of deaths which occurred monthly from April to December in each ward, the town having apparently been quite free from the disease during the first quarter of the year.

WARD.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Totals
1. Lancashire Hill ...	1	5	2	1	1	...	...	...	...	10
2. Heaton Lane.....	...	1	1	...	2	...	2	1	...	7
3. Old Road ..... ..	2	2	5	..	1	...	...	...	..	10
4. Portwood .....	...	...	...	...	1	...	...	3	1	5
5. St. Mary's .....	...	...	1	4	...	...	...	...	..	5
6. Vernon .....	...	...	1	1	2	...	1	...	...	5
7. Spring Bank .....	...	...	2	4	...	...	1	...	...	7
8. Hollywood.....	...	...	2	...	2	2	...	1	1	8
9. Edgeley .....	...	1	1	1	2	...	...	...	...	5
10. Shaw Heath .....	...	...	...	1	1	...	...	2	2	6
11. St. Thomas' .....	...	...	...	1	2	...	4	3	1	11
12. Hempshaw Lane ..	...	...	...	...	...	...	1	...	...	1
13. Cale Green .....	...	...	...	...	...	...	...	1	1	2
14. Heaviley .....	...	...	...	...	...	1	1	...	...	2
Totals .....	3	9	15	13	14	3	10	11	6	84

It is seen that the outbreak commenced in April, attained its maximum prevalence (indicated by 42 deaths) in June, July, and August, largely disappeared in September and burst forth afresh in October, November, and December, causing 27 deaths. On further analysing the above table, it appears that the epidemic slowly traversed the town from north to south. It commenced in and was confined during April and May to the three Heaton Norris Wards. By June it had spread south to the Cheshire side of the river, implicating St. Mary's, Vernon, Spring Bank, Hollywood, and Edgeley, being widely prevalent in these wards during July and August, the latter month also witnessing a temporary recrudescence of the disease in the Lancashire Wards. Shaw Heath and St. Thomas's were attacked in July and August, and though September passed without a death, twelve fatal cases occurred in these two small wards during the last two months of the year. Hempshaw Lane escaped till October, and then only one death was registered. Lastly, of the two southernmost wards Heavily reported one death in September and one in October, and Cale Green had a similar experience in November and December.

Throughout the epidemic the teachers and managers of some of the schools co-operated to a greater or less extent with the Health Department. Lists were received of 247 infected scholars, made up as follows :— St. Paul's, Portwood, 59 ; National, 44 ; Banks Lane, 8 ; Cale Green, 28 ; All Saints', 45 ; St. Mary's Roman Catholic, 10 ; and Hanover, 53. In some cases, especially the last-named, the lists were supplied altogether too late to be of any practical use in preventing further spread, and although a circular had been sent in October, 1894, to every public and private Day or Sunday School in the Borough inviting such notification, there were presumably a considerable number of schools at which the matter was altogether ignored. On the other hand, notice was sent in every case to school teachers when the existence of a case of measles became known to this Department, either through the visits of your inspectors or the school attendance officers. In all cases thus notified or discovered, members of infected households were excluded from school and visited by your inspectors, cautionary notices were distributed and disinfection carried out as far as possible. In regard to two schools, viz., St. Paul's, Portwood, and Cale Green, it was found necessary to close the Infant Department for a fortnight in each case.

83 out of the 84 deaths registered took place during the first five years of life, the number in each year being as follows :—

Under 1	1—2	2—3	3—4	4—5	Total
—	—	—	—	—	—
27	35	12	4	5	83

This in accordance with the observed fact that mortality is greatest in the second, first, and third years of life in the order named.



## THE PREVENTION AND CONTROL OF MEASLES.

There is no doubt that measles is a malady the spread of which it is peculiarly difficult to control. In the first place the disease is highly infectious for two or three days before diagnosis of its real nature is practicable. Then, owing to the indifference with which this affection is regarded by the public, the householder does not deem it necessary to acquaint the Sanitary Authority of invasion of his dwelling by measles, and for the same reason it is exceptionally difficult to induce him to observe a sufficient measure of isolation of those attacked. On the other hand, removal of all imperfectly isolated measles cases to hospital would be absolutely impracticable, though *during inter-epidemic periods* the removal of isolated cases might be attended with excellent results.

In view of these facts, Dr. Theodore Thomson was in 1891 directed by the Local Government Board to make inquiry as to measles in England and Wales and the measures that might be expected to afford means of control of the disease. With this object Dr. Thomson made inquiry in 22 urban and 11 rural districts, and his recently-issued report with an introduction by Dr. Thorne Thorne, C.B., is of considerable interest. The data collected show :—

(1) That measles has exhibited an increasing rate of mortality since the decade 1871-80, whereas the mortality of all the other principal diseases of the zymotic class, with the exception of diphtheria, has decreased (in some instances very markedly) since that period.

(2) That in the decennium 1881-90 measles caused more deaths per 1,000 persons living at ages under five years than smallpox, scarlet fever, diphtheria, and typhoid combined, the respective rates being 3·13 and 2·63.

(3) That measles during the past four years has proved as deadly as whooping cough, and that it even exceeded that disease in mortality during the five years 1886-90.

(4) (a) That measles *attacks chiefly* children in the *third, fourth, and fifth* years of life ;

(b) That the *greatest mortality* from measles occurs in the *second year* of life ;

(c) That measles is pre-eminently fatal in the *second, third, and first* years of life.

There is therefore good reason why Sanitary Authorities should bestir themselves to deal with a disease which causes a mortality so serious, and Dr. Thorne Thorne especially emphasizes Dr. Thomson's observation as to *the importance of arresting or delaying a threatened epidemic*. This disease being "pre-eminently fatal in the second, third, and first years of life," if in any district measles which formerly was epidemic every other year, be so far discouraged by preventive measures as to acquire epidemicity every fourth year, it is clear that a larger number of susceptible children will, when the epidemic arrives, have reached ages at which the disease is little fatal, and that in this way many lives will be saved which were formerly sacrificed to measles.

The means recommended for obtaining control of measles are summarised under the three following headings, lettered (A), (B), and (C).

(A) Measures whereby information may be obtained as regards occurrences of measles. These include :—

1. The adoption of compulsory notification by the medical attendant and householder.
- 2.—Efforts to ensure systematic notification by the householders. This might be even more valuable than (1) as in many cases there is no medical attendant. Such efforts might include the distribution, through the medium of schools or by placarding, of handbills impressing on householders their duty to notify all cases.
- 3.—Systematic notification by school authorities including school attendance officers of any known or suspected cases of measles of which they gain information. *It is particularly important that such information be supplied in inter-epidemic as well as in epidemic periods.*
- 4.—Information, general or particular, from Poor Law Medical Officers, Relieving Officers, Guardians, District Visitors, and Clergy.
- 5.—Prompt information from Registrars of Deaths as to measles fatalities recorded by them.
- 6.—Careful inquiry in each instance as to the possible source of infection supplemented when necessary by
- 7.—House-to-house visitation in the invaded neighbourhood.

(B)—Preventive measures within invaded dwellings, viz. :—

- 8.—Each case should be at once visited by an officer of the Health Department to ascertain and advise as to the means of isolation adopted and available, verbal instructions to be supplemented by handbills. Such visits should be frequently repeated to ensure observance of necessary precautions, and to aid in early detection of cases.

Dr. Thomson also advises removal to hospital of imperfectly isolated cases, but this is a “counsel of perfection,” which is absolutely impracticable in the vast majority of cases, though, as already stated, removal of isolated cases in inter-epidemic periods might be of the greatest preventive value.

- 9.—Thorough disinfection of the house and its contents after termination of each case.
- 10.—Continued observation of members of the invaded household for not less than 14 days after disinfection. Such persons should also receive verbal and printed instructions as to the symptoms of measles and directions to notify at once any suspicious occurrence to the Medical Officer of Health,



(C)—Preventive measures throughout the invaded District :—

- 11.—Notification by the Health Department to School Authorities regarding occurrences of measles.
- 12.—Exclusion of members of households invaded by measles from school for a prescribed period or pending the production of a medical certificate.
- 13.—Exclusion of children inhabiting houses in the immediate neighbourhood of, or having personal communication with, infected houses.
- 14.—Judiciously-timed closure of Sunday and private as well as public elementary schools, especially in rural districts.
- 15.—Precautions with regard to books from public libraries.
- 16.—Prohibition of persons residing in households invaded by measles from attendance at work when such step appears necessary.
- 17.—Instruction of the public as regards the gravity of measles.
- 18.—Temporary addition to the Sanitary Staff for the purpose of effecting the necessary inquiries, visits, disinfections, &c.

By the intelligent and careful adoption of the foregoing measures, much more is to be looked for in the control of measles, Dr. Thorne Thorne thinks, than has hitherto been obtained, but he insists that "it cannot be too clearly understood that good result is not to be expected from the adoption of any single one of these measures, and that if any approach to complete success be aimed at, each one of the several measures indicated must be regarded as necessary and supplementary to the others."

While respectfully deferring to the opinion of such an experienced and distinguished authority as Dr. Thorne Thorne, it is nevertheless hardly surprising, when regard is had to the actual working difficulties of municipal sanitary administration, that Dr. Thomson is unable to point to any one of the 33 districts visited as having systematically adopted all these measures of precaution. In the first place, medical officers of health who are brought face to face with the problem realise that Sanitary Authorities will not favour the adoption of compulsory notification of a disease in connection with which the maximum expenditure and minimum benefit must be expected, and it has been aptly said that this recommendation would carry more weight if the Local Government Board would provide each Authority with the power to require and pay for the notification of *the first case only* in each house, and further take such measures that the plea of ignorance shall not be allowed to prevent the conviction of a householder for not having notified so well known a disease as measles. It has also been objected that the exclusion from school of *children from the neighbourhood of infected dwellings* would give rise to very great friction, and that the Sanitary Authority have no power whatever to *enforce* the closure of Sunday and private schools. I am personally of opinion, moreover, that to prohibit from work persons in whose houses measles exists would be unjustifiable, unless they were wilfully neglecting *practicable* precautions or had refused removal of the cases to the hospital. As already remarked, it would be practically impossible for any sanitary authority to undertake such removal. The other measures recommended might, in my opinion, be adopted without much difficulty; and, as far as the resources of your Health Department would permit, attention has in the past been directed to the majority of them.



## Scarlet Fever.

This was the only important zymotic that was less prevalent than in 1894, only 170 cases being reported as against 229 in 1894 and 254 in 1893. Six deaths were registered from this disease, representing an annual rate per 1,000 of 0·08 as compared with 0·18 for the 33 Great Towns and 0·15 for the 67 other Large Towns. The disease was therefore of a very mild type, but as I have before pointed out, this very mildness of type increases the difficulty of controlling scarlet fever prevalences, for it was again our experience that in many instances the symptoms of illness were so slight that recognition of the disease was long delayed, infection being in the meantime transmitted to others. By far the largest number of cases occurred in the last three months of the year (the usual period of maximum prevalence) 39 cases being reported in October, 30 in November, and 23 in December. On "plotting" the occurrences on to the ward-map it was seen that a special incidence was manifested in the Lancashire Hill and Old Road divisions of Heaton Norris, in Portwood and Cale Green. As might be expected the elementary schools in these wards were to a greater or less extent foci of the disease; in fact two, viz., St Paul's, Portwood, and the Cale Green British School, were closed by order of the Sanitary Committee, for a period of a fortnight in each case, on account of the prevalence of this disease and of measles amongst the scholars. In the course of inquiry it was found that in a considerable number of cases patients convalescing from measles contracted scarlet fever, or *vice-versa*. During the last three months of the year mumps was very prevalent, and it was also observed that this affection in many instances closely preceded or followed scarlet fever in the same child.

### "RETURN" CASES OF SCARLET FEVER.

The above phrase is employed to indicate re-appearance of scarlet fever infection in a household within 21 days after the return of one or more of the inmates from hospital. The matter was one which engaged a large amount of attention during the year under report from the Medical Department of the Local Government Board, the Metropolitan Asylums Board, and the health officers of several large communities. Its interest was not diminished by the fact that in the case of *Keegan v. Birmingham Corporation* the latter were cast in £50 damages by the parents of a child who contracted a fatal attack of scarlet fever in the manner indicated. It was alleged that the child from whom the second case contracted the disease was found, when it reached home, to be still peeling on one foot, and that there was a sore behind one ear; but, on the other hand, it was proved that it had been three times carefully examined before being discharged.

In Stockport during 1894, 110 cases of scarlet fever were treated in your hospital. There were 109 dismissals, followed in two instances by return cases (2) and (1). Of these two dismissals the first took place 48 days after admission, the attack having been a very severe one, accompanied by discharges from the nose and ears and by suppurating neck glands. The patient was dismissed apparently well on May 27th, slept in a room by himself, and exhibited no recurrence of symptoms. Nevertheless, on June 3rd and 5th, two further cases occurred in his home. The second dismissal which was followed by a return case took place on the fifty-sixth day after admission. The attack was a comparatively mild one, but had been attended



with discharges from the nose and ears. The patient was dismissed on September 2nd, apparently perfectly well; as a means of extra precaution was supplied with, and used, oil of eucalyptus as an inunction; for some time afterwards slept in a separate room, and had no perceptible recurrence of symptoms. On September 8th, however, her brother sickened with scarlet fever.

**The various suggested causes or explanations of such "return" cases include the following:—**

1.—That these occurrences are really sometimes examples of mere coincidence, the fresh case having an entirely independent source of infection.

2.—Imperfect disinfection of the dwelling or its contents, or the concealment and subsequent production and use of some infected article.

3.—Insufficient bathing of patients during the latter weeks of their detention in hospital.

4.—Alleged infectivity of the breath of recently discharged patients, their lungs being regarded as mechanical carriers of the infected material with which they have become charged during prolonged residence in an infected atmosphere, especially that of an overcrowded ward.

5.—Possible infectivity of the urine of such patients (?)

6.—Carelessness on the part of hospital officials in permitting the discharge of patients who exhibit evidences of infectiveness.

7.—Defective methods of discharge by which infection is conveyed in the patients' clothes or hair.

8.—Recurring infectivity, that is to say, the re-appearance of desquamation or infectious discharges *after* dismissal from hospital in an apparently healthy condition.

The validity of these various suggestions has been very ably discussed by Dr. Chalmers, of Glasgow, and the late Mr. T. W. Thompson, one of the medical inspectors of the Local Government Board (*vide Lancet*, 22/6/95 and 23/11/95), as well as by Dr. Boobbyer, of Nottingham (*Public Health*, June, 1896), who has observed an appreciably *higher mortality* of return cases than of others.

The observations of these inquirers are of great interest and suggestiveness. Dr. Chalmers states that during the year 1894, 2593 persons were dismissed "well" from the three Glasgow Hospitals, and that re-infection appeared subsequently in 70 of the houses to which these patients returned, or 2·6 per 100 dismissals. In the North-Eastern Fever Hospital in London, in the same year, the percentage of return cases was 3·5 of the dismissals; in Nottingham, 3 per cent.; in Leicester, 5 to 6 per cent.; and the late Mr. T. W. Thompson has reported the case of a hospital near London where the percentage of return cases was 15, though no laxity in management was apparent. Of the Glasgow re-infections, 93 per cent. occurred within a fortnight after dismissal, and in every case there was community of life either in sleeping (*e.g.*, 30·3 per cent. slept in same bed and another 30·3 per cent. in the same room) or while at meals or play. In 19 per cent. of cases



certain departures from health—chiefly desquamation and discharges from the nose or ears—recurred after dismissal, and such recurrences are partly attributed by Dr. Chalmers to the altered and comparatively irregular conditions of life and dietary which surround patients after their dismissal from hospital, and destroy their physiological balance for the time being. In the majority of dismissals associated with return cases there was, however, no visible departure from health, and the endeavour to impugn overlooked or insufficiently disinfected clothing was rarely satisfactory. Dr. Chalmers thinks an explanation of the majority of return cases may be found in their manifested tendency to associate themselves with dismissals from wards which are continuously overcrowded (especially when the allowance of cubic space per head for children is based upon a low estimate), and the air of the ward becomes surcharged with the products of scarlatinal elimination. If such a relation really exists between sustained overcrowding and return cases, we shall be most likely to avoid such consequences by regarding the regulation 2,000 cubic feet of free air space as an irreducible minimum irrespective of age.

In one of these three Glasgow hospitals the patients were finally bathed in a separate building and discharged with scrupulous care to prevent the conveyance of infection. In another, the discharge took place from the ordinary ward bath-room, without such careful attention to preventive measures; and it is a significant fact that the number of recurrences following upon dismissals were slightly *greater* from the former than from the latter institution, indicating that the matter is not merely one of faulty administration.

Having regard to the invariable community of life of recently discharged Glasgow patients with "return" cases, and the large percentage (60·6) which slept either in the same bed or the same room, the practical instruction to parents is plain, viz., that **every effort should be made to prevent comingling of the recently recovered with healthy children, and the restriction placed on their sleeping together should be absolute.**

Another group of cases recorded by Dr. Chalmers indicates that children residing in a house in which scarlet fever is being treated are exposed to a largely intensified risk just at the time that disinfection is being carried out. This is, probably, sometimes owing to the mechanical displacement of infectious dust while the process of cleaning is going on. The obvious lesson is that **children should be kept away from the house during and for some hours after the disinfecting operations.**

The late Mr. T. W. Thompson, in his paper read before the Epidemiological Society, endorsed Dr. Chalmers' views, and, as regards a series of cases into which he had inquired, had observed some indication of the operation of a *seasonal* influence, the "return" cases occurring most frequently during the latter half of the year. He also noted that such cases were more frequent during the rise of an epidemic, and further suggested that their occurrence may be in part regulated by variations in the degree of infectivity of scarlet fever or the receptivity of individuals. He emphasised the fact "that 'return' cases occur in the practice of the most experienced and careful hospital physicians," and though "a certain proportion of such cases may, of course, at divers times and places be due to carelessness in the discharge of patients," or on the part of those responsible for the disinfection of the patient's dwelling and effects, there are, nevertheless, in all probability, some more obscure factors at work, factors, perhaps, closely bound up with the natural history of scarlet fever."



## Diphtheritic Disease.

[illegible]

It is seen :—

(1) That the greatest prevalence of the disease was in the fourth quarter of the year, which is usually the case.

(2) That over 83 per cent. of the attacks and ALL deaths occurred amongst children between one and seven years of age.

(3) That the total proportion of females to males attacked is nearly seven to four, whilst above seven years of age only one male was attacked as against 9 females, 5 of whom were adults. This special incidence on females is a matter of general observation, and has been attributed by Dr. Thorne-Thorne to the facts that in diphtheria intimate contact with the infected involves exceptional risk, and that women are specially liable to such exposure.

(4) The case-mortality amongst males was 50 per cent. ; amongst females 43·2 per cent., and of all occurrences 45·7 per cent.

On “plotting” the cases on to the Ward Map, it appears the most marked incidence of the disease was upon an area comprising St. Thomas’ Ward (*i.e.*, Higher Hillgate and the streets between Middle Hillgate and Wellington Road) and portions of Hempshaw Lane and Heaviley Wards contiguous, respectively, to Johnson Street and Charles Street. Within these limits 14 cases occurred, of which 4 were in the neighbourhood of Charles Street and the immense malodorous tip which lies at its eastern end. Shaw Heath Ward claims 7 cases, 6 occurred in Portwood, and a group of 5 at the southern end of Cale Green Ward, in the neighbourhood of Russell Street and Cambridge Street. In passing, I may state that much complaint has been made from time to time about offensive sewer manholes in the latter thoroughfare, and that recently an automatic flushing tank has been provided, which it is hoped will render this sewer less offensive.

With regard to other **associated insanitary conditions**, the inevitable offensive privy pit, in more or less close proximity to the dwelling, existed in the great majority of cases. In 12 instances the nuisance therefrom was much complained of, and was specially bad in 2 of the 3 back-to-back houses in which the disease appeared. In 6 instances the drainage arrangements were defective, and this was markedly so in one case. 4 occurrences of the disease were in very damp houses, 3 of these being in streets which had not been paved.

The question of **school influence in propagating diphtheria** has recently been the subject of considerable controversy, and I have therefore carefully analysed Stockport experience for the year under notice. Of the 59 cases notified, 38 were attending no school, and though in 19 of these, other inmates of the infected houses were scholars distributed amongst 12 schools, no evidence was obtainable even indirectly implicating any of these institutions.



The remaining 21 sufferers were pupils from 12 different large elementary schools. Six of these institutions contributed 1 occurrence each; three were debited with 2 cases each, but only in one (Hanover) of these three schools does the second case which arose appear to have been connected with the previous one, an interval of 6 months between the two occurrences having elapsed in both of the other instances. To another school (St. Thomas') belonged 3 sufferers, who sickened about June 11th, August 31st, and Oct. 23rd respectively; and finally one school (Portwood Wesleyan) had 5 of its pupils down with the disease. Of these 5 latter cases the first occurred on 25th June, and was apparently an isolated manifestation. The four others were reported on the following dates, viz., October 14th, 16th, 31st, and November 3rd, the sufferers' ages being respectively 5 years, 5 years, 5 years, and 3 years. These 4 children were all in the Infant Department, and I think it is not unfair to assume that school attendance was probably responsible for the three latest, especially as there were no other cases recorded at that time in the rest of the large Portwood Ward. It therefore appears, that out of the 59 cases investigated anything like clear evidence of school influence is obtainable in 4 instances only.

Regarding the milk-service, no community of supply could be detected, and in nearly every instance milk was brought only in small quantities and used at once.

I am indebted to Mr. W. H. Tomlinson, M.B., Lond., for the following account of the somewhat unusual circumstances of a case reported by him on the 15th December, 1895. Dr. Tomlinson says:—

“On 27th November I was hurriedly called to see another boy at the same house who had died suddenly. A coroner's inquest was held on the case and a verdict of ‘Death from syncope’ was returned. The mother told me that ‘the child had been a little hoarse and was swollen round the neck,’ and I take it the glands of the neck were enlarged. The mother thought so little of its illness that she did not send for medical advice until the child died suddenly. Now, in my opinion, this child died from diphtheria and cardiac syncope, and my reason for this belief is the case of the other child (which I notified yesterday). I was called to see this second child on December 3rd. It began with a fit, was feverish, and was cutting the eye teeth. There was no redness of the throat and no membrane, but the tonsils were hypertrophied, as is often the case in strumous children. The febrile movement subsided, and the child was gradually recovering; on the 12th and 13th December I noticed a little huskiness, but there was no redness or membrane, and I could see nothing wrong with the throat. On the morning of the 14th December, however, symptoms of membranous laryngitis developed, and the child died suddenly asphyxiated on the morning of the 15th December.”

In my last annual report I referred to the practical value of bacteriology as an aid to diagnosis in cases of a doubtfully diphtheritic nature, and to the arrangements made by you for the elucidation of such cases by Professor Delépine. The following is a copy of a circular letter relating thereto sent to the medical practitioners of the District;

Public Health Department, Stockport, 21st October, 1895.

THE DIAGNOSIS OF DIPHTHERITIC THROAT AFFECTION.

Dear Sir,—I beg to inform you that the Sanitary Committee, recognising the importance and difficulty of accurate diagnosis in suspicious cases of throat illness and the desirability of determining bacterioscopically the real nature of *all* supposed cases of Diphtheria and Membranous Croup, have now completed arrangements for the bacteriological examination of morbid products in such cases.

Professor Sheridan Delépine, M.B., B.Sc., of Owens College, has kindly consented to undertake this work as a matter of public interest, provided the Bacteriological Laboratory of the College be put to no expense thereby.

Cases containing the necessary sterilized tube and swab may now be obtained at this Office between 8.30 a.m. and 5.30 p.m., and at other times from the Police Station. The required particulars should be carefully filled in upon the label surrounding the case, and the latter should be enclosed in the envelope provided *and posted at once* to Professor Delépine. The result of his examination will be transmitted to this Office, from whence a communication will be sent to the patient's medical attendant.

Kindly note that examinations under this arrangement must be effected through the Public Health Department, and that neither tubes nor reports can be obtained directly from Professor Delépine, who desires that this be clearly understood.

I am, dear sir, yours faithfully,

CHARLES PORTER, Medical Officer of Health.

P.S.—To cover expenses an inclusive fee of 3s., payable to the Public Health Department, will be charged for each tube, but this expense will be borne by the Sanitary Committee where patients are unable to defray it.

Considerable trouble was taken and ingenuity expended by Professor Delépine in completing the details of this arrangement, and the results of his examinations have been communicated at the earliest possible moment to the practitioner concerned. The number of cases in which material has been sent for experimental cultivation is, however, disappointingly small, and the apathy and indifference of the medical men of the neighbourhood to the facilities thus placed by you at their command are most surprising.

HOSPITAL ACCOMMODATION FOR DIPHTHERIA.

Existing knowledge of the true causes of diphtheria being still far from perfect, and the advent of improved sanitation and better preventive measures having been accompanied in most large towns by no corresponding diminished prevalence of the disease, it is most desirable that every sufferer from this deadly affection should have the benefit of the full resources of curative medicine. There is, perhaps, no disease which requires more careful nursing and attention to hygienic surroundings than diphtheria, and for this reason, as well as on account of the advantages of isolation, I beg leave to direct your special attention to the great necessity for the provision of a separate pavilion at your hospital for cases of this malady. At present I cannot accept the responsibility of admitting such cases, as they would have to be placed, to the danger of all concerned, amongst typhoid or scarlet fever patients. The result is that the sufferers remain at home, without proper accommodation or suitable nursing, to infect others and usually to die themselves.

## Influenza.

16 deaths were registered from this cause during the year, 12 of which occurred in the Spring months, viz. :—1 in February, 8 in March, and 3 in April. Of the 4 remaining deaths 2 were registered in May, 1 in June, and 1 in November.



As remarked in my last report, this disease which of late years has been such a frequent epidemic visitant has in a modified form taken up its abode with us and "come to stay." It is very improbable that the 16 deaths directly assigned to it at all adequately represent the true extent of the fatal mischief wrought by this disease, as it undoubtedly aggravated and complicated many other maladies, especially respiratory, and has left many sufferers in a more or less permanently debilitated condition.

### Puerperal Fever.

8 cases were reported during the year, 7 of which ended fatally. In no case were the sanitary conditions below a fair average. The 8 cases reported were in the practice of eight medical men, and none of them were attended by the same midwife. The midwife was warned in every case, her person bathed and clothing disinfected.

### Erysipelas.

31 cases were reported during the year, and 2 ended fatally. Some of these occurrences were traumatic in origin, but in the great majority of cases no history of injury was obtained.

Apart from the fact that not infrequently structural insanitary conditions are detected and remedied as the result of inquiry into cases of erysipelas, the utility of the notification of this disease is open to doubt. This is also the recorded opinion of other Medical Officers of Health.

### Whooping Cough.

32 deaths were assigned to this cause during the year, the mortality per 1,000 persons living being equal to 0.42 as compared 0.04 in 1894 and 0.45 in 1893, with 0.37 for the 33 Great Towns and 0.31 for the 67 other Large Towns. This mortality was an appreciable factor in the increased general death rate for the year under notice.

Of the 32 deaths referred to this cause all but 2 occurred during the first five years of life, 15 deaths took place amongst children under 1 year of age, and 10 amongst those in their second year. 2 deaths occurred in the third and 2 in the fourth, and 1 was recorded in the fifth year.

As a cause of death, whooping cough appeared on the returns for each of the 12 months, but was apparently most prevalent in the 2nd and 3rd quarters of the year, in which respectively 11 and 9 deaths took place from this malady, the numbers in the first and fourth quarters being 5 and 7.

As regards ward-incidence, Heaton Lane and Old Road Wards together claimed 9 deaths, Portwood and Vernon 8, whilst 4 occurred in Hempshaw Lane. As in regard to measles, though not to the same extent, the disease appears to have been prevalent in the northern wards during the first half of the year, whilst the southern wards suffered in the latter half.

A proposal has been made to notify whooping cough, but I am disposed to regard this as hardly within the range of practical sanitation, owing to the insidious onset of the disease, the absence of a rash, and the consequent fact that the disease is rarely detected until many days after it has reached the infectious stage. The deaths are almost always due to bronchitis, pneumonia, or convulsions, very frequently the result of neglect and undue exposure, as in the case of measles.

## Lung Diseases.

### Phthisis or Consumption.

166 deaths were assigned to this cause during 1895, representing a rate of 2·2 per 1,000 per annum, as compared with 2·11 in 1894 and with 1·38 for England and Wales during the same year. Phthisis or consumption is one of the diseases that may justly be regarded as, in a large degree, preventible. It is distinctly predisposed to by insanitary conditions, and their gradual removal throughout the country has led to a steady decline in the phthisis death-rate. The streets and courts on both sides of Middle Hillgate maintain their reputation as an area of special incidence, and this is not surprising, for as pointed out in 1894 "the population is perhaps more dense here than in any other part of the town, much of the property is very old, damp, and dilapidated, back-to-back houses are numerous, ancient and leaky privies are to be found close to dwellings, and the atmosphere of the houses and courts is often stagnant and impure." Thirteen fatal cases occurred in the Heaton Lane district, 15 in the Old Road Ward, and 12 in Spring Bank. Twenty-seven deaths were reported in the Workhouse, where, of course, many sufferers from the disease are congregated.

The influence of occupation in regard to mortality from phthisis is very important, but, to be of practical value, statistics on this point should relate to a substantial period of time, and I do not at present possess data from which reliable deductions might be made.

### Bronchitis, Pneumonia, and Pleurisy.

The deaths from this cause numbered 463 of which 183 occurred in the first 5 years of life and 280 after the completion of this period, as compared with 118 and 183 respectively in 1894. This large increase of respiratory mortality is, probably to a considerable extent, a result of the widespread epidemic of measles and whooping cough, both of which maladies frequently terminate in fatal pulmonary complications or sequelæ, and the same observation applies to influenza, which was very prevalent in the latter part of the Spring. The deaths registered represented a rate per 1,000 persons living of 5·9 as compared with 3·7 for England and Wales during the decennium 1884-1893. Mortality was again greatest from this cause in Portwood and St. Mary's Wards, in each of which it reached the exceedingly high figure of 9·7 per 1,000 of the ward population. Spring Bank (6·7) Hollywood (6·5) and Shaw Heath (6·4) come next in order, whilst Edgeley Ward (3·5) is once again the lowest. This latter fact is noteworthy, as it has been suggested that the premature occupation of newly built houses before they were properly dry may have had some bearing on the heavy mortality from chest complaints. It nevertheless remains that in Edgeley, where building is proceeding most rapidly, mortality from lung disease (other than consumption) is lowest.

## Contagious Diseases (Animals) Act and The Rabies Order.

The only facts to be recorded under this heading relate to rabies.

In consequence of the marked prevalence of rabies in certain parts of the kingdom, a circular letter dated 2nd February, 1895, was received from the Board of Agriculture recommending that cases of suspected rabies should



be verified by experimental inoculation, and that for this purpose the brain or cord of the dog be forwarded to the Brown Institute. A resolution authorising the adoption of this measure was passed by you on 11th February. On 25th February a further letter from the board, dated 19th February, was read, in which the Local Authority was urged to put the Muzzling Regulations in force within the borough. The committee did not, however, see their way to take this step, owing to the absence of rabies in the district.

On 2nd March a large rabid St. Bernard dog escaped from Pendleton made its way through Didsbury and Cheadle, biting at last 3 persons in these villages; reached Stockport on 3rd March, and severely bit six persons within the borough. It was eventually killed, and a post-mortem examination by Mr. E. H. Curbishley, M.R.C.V.S., and myself afforded strong presumptive evidence of rabies. The matter was considered at a special meeting of the Sanitary Committee on March 4th. It was then resolved that the Muzzling Regulations be adopted and enforced, and that the Brown Institute be requested to state how soon they could furnish the results of their investigation of the case. Inquiries as to the treatment at the Pasteur Institute of those bitten were also directed. A further meeting on 6th March considered a message from the Brown Institute that their examination would require a minimum period of 13 or 14 days: the following telegram from Professor Horsley (of London), viz., "Not safe to wait, patients must go to Paris on veterinary certificate: rabies symptoms sufficiently clear if dog not strange or killed;" and a similar message from the late M. Pasteur, "Patients should come at once."

Dr. Sidebotham, of Hyde, also kindly attended and furnished the committee with much information as to the management, &c., of such patients in Paris, and it was resolved that the 6 bitten persons be sent forthwith in charge of the Medical Officer of Health. This was done, and they remained under treatment at the Pasteur Institute for three weeks. The total inclusive cost was £73 1s. 6d.

In a special report presented to you on 22nd April I drew attention to the misleading tendency of the Board of Agriculture's circular, dated February, 1895, inasmuch as it not unnaturally led certain members of the Committee to think that it would be more reasonable to postpone the departure of the patients till a positive verdict of rabies had been received from the Brown Institute. This meant a minimum delay of 14 days, and probably much longer, the actual time occupied in regard to the dog in question being 19 days. But for Messrs. Pasteur and Horsley's telegrams this delay would probably have occurred, and in any case the misconception created by the circular is directly responsible for the loss of three valuable days. A copy of my report was sent in due course to the Board of Agriculture, and on 16th September, 1895, a further circular was issued by the Board to correct the misleading effect of their memorandum of February 2nd, 1895, and to emphasize the fact that the investigation at the Brown Institute should not be allowed to delay or interfere with the treatment of patients. I submit, however, that, if such patients are to be sent to Paris, **no advantage of any kind can accrue from an investigation by the Brown Institute**, because if a portion of the dog's brain or cord be taken to the Pasteur Institute, as is requested by the authorities there, experimental inoculation will be made by them in the ordinary course.

The Chief Constable informs me that between 3rd March and 31st December, 1895, and in accordance with the Muzzling Regulations, 256 dogs were seized by the police. Of these 33 were sold, 56 claimed, and 167 destroyed.

Several attempts were made during the summer by those opposed to the Muzzling Regulations to obtain their revocation, and on August 12th it was resolved that the order be rescinded in regard to dogs wearing a collar with the name and address of the owner legibly engraved thereon.

## The Isolation Hospital.

### A.—DIALSTONE LANE HOSPITAL.

The following particulars, which have from time to time been asked for by different Authorities, may with advantage be here recorded :—

**SITE.**—An area of three acres, one rood, at the junction of Dialstone and Cherry Tree Lanes, one mile six furlongs and 186 yards from the Court House. The nearest point of the pavilions is 79 feet from Dialstone Lane, 63 feet from Cherry Tree Lane, 524 feet from Cherry Tree Farm House, 456 feet from No. 109, Cherry Tree Lane, and 467 feet from Alderman Robinson's house. The subsoil is yellow boulder clay.

**COST :—**

			£	s.	d.
Cost of Buildings	...	...	4635	13	4
Cost of Site	...	...	1346	14	0
Cost of Furnishing	...	...	746	7	10

to Jan. 1st, 1895.

**ACCOMMODATION.**—Consists of central administrative block and two detached pavilions (north and south). The central block contains on the ground floor, kitchen, scullery, matron's parlour, and a dispensary. Upstairs are bathroom, matron's bedroom, large bedroom for three servants, and three nurses' bedrooms. In basement are linen store, boiler for heating apparatus, and cellars. Each pavilion is approached from the central block by covered corridors, and is a single-storied building. It is entered by a hall leading to a passage, into which opens the doors of its three constituent wards. Two of the wards each contains 12,096 cubic feet, and the third or intermediate one 4,410 cubic feet. Each wing contains also a bathroom with movable bath, a nurses' room, and store cupboard. The administrative block and the southern wing are provided with water-closets; in the northern or typhoid wing remain the original earth closets, scavenged from outside. The hospital was opened for the reception of patients in 1881.

### CASES TREATED FROM 1888 TO 1895 INCLUSIVE.

	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.
Smallpox .....	98	0	1	0	6	22	26	0
Scarlet Fever.....	35	36	91	32	26	127	138	100
Typhus .....	3	0	0	0	1	0	0	0
Enteric ... ..	12	14	22	15	16	85	19	37
Diphtheria.....	0	0	2	1	2	9	2	0
Other diseases ...	1	16	4	0	0	1	0	0
	149	66	120	48	51	244	185	137



## PAYMENTS BY PATIENTS.

	£	s.	d.		£	s.	d.		£	s.	d.
1888 .....	108	4	6	1891 .....	25	7	0	1894 .....	150	9	10
1889 .....	591	10	9	1892 .....	150	18	6	1895 .....	176	15	4
1890 .....	122	14	6	1893 .....	122	12	0				

Total in 8 years = £1,448 12s. 5d.

## NETT COST OF MAINTENANCE.

	£	s.	d.		£	s.	d.		£	s.	d.
1888 .....	715	0	2	1891 .....	928	6	2	1894 .....	1313	12	0
1889 ....	864	19	0	1892 .....	509	19	8	1895 .....	1137	5	11
1890 ...	606	16	2	1893 ....	1392	8	11				

## CHARGES FOR REMOVAL, MAINTENANCE, AND TREATMENT OF PATIENTS, DISINFECTING, &amp;c.

All patients resident within the Borough are removed, maintained, and treated, and their belongings disinfected at the expense of the Corporation.

Members of the families of ratepayers in the Borough who reside outside are charged 25s. per week for maintenance and treatment; 3s. per hour for use of horse ambulance between 8 a.m. and 5 p.m., and 4s. per hour at other times; 7d. per hour per man employed for disinfection of premises, and 7s. 6d. to 5s. for steam-disinfection of clothing, &c.—(*Vide* Minutes of Sanitary Committee, February 26th, 1894, and March 12th, 1894.)

The Guardians' patients and those of other Sanitary Authorities are charged the following rates:—Two and a half guineas per week for maintenance and treatment of each patient; 4s. per hour between 8 a.m. and 5 p.m. for removal of patients, and 6s. per hour at other times; 3s. per hour between 8 a.m. and 5 p.m. for removing infected articles for disinfection, and 4s. 6d. per hour at other times; 10s. 6d. per van-load (minimum charge 5s.) for steam-disinfection of such articles.—(*Vide* Minutes of Sanitary Committee, February 12th, 1894.)

In the following table is set forth particulars in regard to the number of patients isolated during the year 1895. The beneficial influence of the hospital was again most marked, especially in dealing with the scarlet fever outbreak:—

	In Hospital		Admitted.		Recovered.		Died.	
	Jan. 1st,	1894.						
Scarlet Fever ...	12	.....	100	.....	109	.....	3	
Typhoid Fever. .	3	.....	37	.....	32	.....	8	
Smallpox .....	—	.....	—	.....	—	.....	—	
	<u>15</u>		<u>137</u>		<u>141</u>		<u>11</u>	

Average length of isolation for smallpox cases 24 days.

„ „ „ scarlet fever cases 52 days.

„ „ „ enteric fever cases 38 days.

## COMPARATIVE MORTALITY OF CASES TREATED

In Hospital.	At Home.
Scarlet Fever ..2·7 per cent.	4·3 per cent.
Typhoid Fever 20·0       ,,	35·3       ,,

Many of the cases of typhoid were not sent into hospital till their chance of recovery had been minimized. One case was actually moribund when received, and died a few hours later, while three other cases ended fatally 2, 3, and 4 days respectively after admission. The average duration of the eight fatal cases after reception was nine days.

The advantages of hospital treatment are clearly manifest.

## \*Summary of Hospital Expenditure.

FOR THE YEAR ENDING DECEMBER 31ST, 1894.

	£	s.	d.
Salary and Wages... ..	437	9	6
Food Account ... ..	447	3	1
Instruments and Drugs ... ..	43	0	6
Coal, Coke, Gas, and Water ... ..	156	1	5
General District and Poor's Rate ... ..	45	4	9
Rent of Telephone... ..	15	3	2
Furnishing... ..	36	4	11
General Repairs to Pavilions, Out-offices, Fever Van, &c. ...	82	7	8
Miscellaneous ... ..	51	6	3
	1314	1	3
Less amount received from other Authorities for isolation of other cases, disinfection, &c. ... ..	176	15	4
Balance, being excess of Expenditure over Income ...	1137	5	11

## THE HOSPITAL STAFF

comprises the matron, steward, four nurses (including probationers), and in addition a cook, housemaid, and laundress. Some slight changes took place in the nursing staff by resignation. The nursing and household arrangements worked smoothly and satisfactorily under the efficient superintendence of the Matron. The responsible duties of the Disinfecting Station were carefully performed by the Steward and his assistant, and the condition in which the hospital premises and grounds were kept gave much satisfaction to your Hospital Sub-Committee.

A word of cordial acknowledgment is also due to the Police for their readiness at all times to convey urgent telephonic messages, when possible, to the friends of those very dangerously ill.

\* Summary of Statement kindly furnished by the Borough Treasurer.



## STRUCTURAL ALTERATIONS, &amp;c.

Beyond the carrying out of necessary repairs there is nothing to record under this heading.

## STEAM LAUNDRY.

Towards the end of the year this question became a very pressing one, and the provision of a steam laundry, with approved modern equipment, was very energetically advocated, especially by the Chairman of the Hospital Sub-Committee (Mr. Councillor John Allcock). As the practical results of his efforts, tenders were eventually invited, and that of Messrs. Thomas and Taylor, of Stockport, was accepted to fit up a complete steam laundry according to the Borough Surveyor's specification, for the sum of £236, certain additions and accessories bringing the total final cost to £260 16s. 8d. The work was completed on the 31st December, and came into use early in the present year. Some trouble was at first experienced in getting sufficient heat from the steam coils in the drying chamber, but this was soon overcome by the contractors. The installation is now working most satisfactorily, and this valuable improvement is greatly appreciated by all concerned with the administration of the Hospital.

## OTHER REQUIREMENTS.

The provision of a high unclimbable impenetrable fence round the hospital grounds is a matter which requires early attention, as well as the partitioning off by similar fences of the grounds used by different classes of convalescents.

The matter of further provision for the resident staff, both as regards sleeping accommodation, dining and day room, and also the question of erecting an unclimbable, impenetrable fence round the Hospital grounds, received the careful attention of the Committee in the last quarter of the year, and the Medical Officer of Health was directed to wait upon Dr. Thorne-Thorne, Chief Medical Officer of the Local Government Board, with a view to obtaining the sanction of the Board to a loan covering the cost of these requirements and also of the steam laundry. Unfortunately, however, a strict compliance with the letter of the Board's regulations with regard to isolation hospitals necessitated the acquisition of a narrow strip of land behind the disinfecting station. The price demanded for this was altogether unreasonable, and therefore the Committee could not fulfil the Local Government Board's conditions, and decided to pay for the extension out of the rates. The Surveyor was thereupon requested to prepare plans for a new administrative block comprising 8 bedrooms, apartments for matron, master, and nurses, dispensary, waiting and committee rooms, &c. This is now in course of erection.

## B. WHITEHILL SMALLPOX HOSPITAL.

The two mild cases of smallpox which occurred during the year were isolated at Whitehill.

Whitehill Hospital is situated 205 yards from the nearest inhabited building (a large mill); there are 115 houses within a quarter of a mile radius; and about 1,100 within the half-mile radius. The requisite bedding, &c., is kept in readiness at the Isolation Hospital.

The cubic capacity of the rooms at Whitehill is as follows :—

GROUND FLOOR.—		No. 1 to east of hall,	8,945 cubic feet.
		No. 2 to west of hall,	3,506 „
UPPER FLOOR.—		No. 3, large ward	7,480 „
		No. 4, room over hall,	1,028 „
		No. 5, room over No. 2,	2,772 „
		No. 6, room off bath- room	1,980 „
		No. 7, room between No. 6 and No. 3,	1,203 „

### Need for Further Hospital Accommodation.

Almost the last official act of Dr. EDWIN RAYNER, J.P., your late Medical Officer of Health, was to point out the necessity for further hospital accommodation. A generally accepted rule is that in large communities one bed should be provided for every thousand inhabitants. Each patient should in addition be allowed 2,000 cubic feet of air-space, 12 feet of wall-space, and 114 square feet of floor-space, and there should be means of separately isolating at least four kinds of infectious disease. In addition, in connection with all fever hospitals, a quarantine or observation ward for suspicious cases is highly desirable. At present, however, you have no observation ward, and only possess the means of isolating 3 kinds of infectious disease, even with Whitehill. For though there are 3 wards in each of the 2 pavilions at Dialstone Lane, there is only safe accommodation for 2 classes of infectious disease there, as the 3 constituent wards of each pavilion are in direct communication with each other. As regards the number of beds available, Dialstone Lane affords regulation cubic capacity for 28 adult patients, though during the typhoid epidemic a much larger number had to be accommodated. Whitehill will accommodate, say, 15 patients without serious overcrowding. This makes a total of 43 available beds. Now, the population of the town is, say, 74,000, and it is rapidly increasing. The provision of 75 to 80 beds altogether for the purposes of isolation is, therefore, desirable, and would not be at all excessive.

In connection with this question, I would remind you that the memorandum of recommendations submitted on 22nd January, 1894, by Dr. Bruce Low on behalf of the Local Government Board includes the following :—  
“To meet the increased needs of a large manufacturing population, at whose homes the proper isolation of infectious disease is impracticable, the Sanitary Authority should take steps to supplement their present accommodation.”

Under the heading of DIPHTHERIA, I have already referred to the regrettable fact that you are at present without means of isolation for cases of this disease, which is from time to time so prevalent in large towns, and in which good nursing and hygienic surroundings are of such importance to the welfare of the sufferers.



## Disinfection.

Throughout the year your Nottingham disinfectors continued to work satisfactorily.

Disinfection of infected premises has been energetically carried out. Walls, furniture, &c., have been washed with corrosive sublimate solution and the rooms well ventilated.

Recent researches go to show that chlorinated water (a 1 per cent solution of bleaching powder) is one of the best and cheapest disinfectants that can be employed, and during the latter part of the year it has been used instead of sublimate solution.

During the year 281 infected rooms in dwelling houses or schools were cleansed and disinfected; 3325 articles were disinfected by steam, and 120 inmates of infected houses were bathed.

Finally, in regard to disinfection, I wish to point out that to make your system still more perfect, the provision of one or two properly warmed waiting rooms for the temporary reception of those whose houses are being disinfected, is very desirable.

### METHOD OF DEALING WITH CASES OF INFECTIOUS SICKNESS.

An inspector at once visits each case reported, and is provided with directions as to points for systematic inquiry in regard to possible sources of infection, means of isolation adopted and available, sanitary condition of premises, &c. Wherever isolation at home appears to be impracticable, removal to hospital is advised and is rarely seriously objected to. The healthy inmates of the infected house are when necessary taken to the disinfecting station, where they are bathed whilst their clothing is being disinfected. A supply of coloured chlorinated lime solution is furnished: cautionary notices are left at the house and those on each side of it, and if the case is not removed, a post card is left for signature by the medical attendant, and is returned to this Department when the case terminates and disinfection of the premises can be carried out. A notice is, in addition, served on the parents requiring them to keep the other children from school, and communications are sent to the schoolmaster, to the clerk of the School Attendance Committee, to employers of labour, and to the public librarian. In cases presenting any suspicious grouping or obscure features I enquire personally into their history, and in this way during the year 1895 have investigated a large number of cases. I have from time to time interviewed many of the schoolmasters of the town in order to secure their valued co-operation. In addition I have personally questioned the scholars in one large school, and separately examined each of those presenting any suspicious symptoms.

## Cemetery.

This consists of 28 acres of sandy mould overlying boulder clay, and of a known depth throughout of at least 20 feet, situated about a mile from the centre of the town and between the Buxton Road and the Tin Brook. It has been in use for more than half-a-century. There is no great aggregation of houses in the immediate vicinity.



In Stockport metallic coffins are frequently referred to as "Sanitary," and from time to time persons who can ill-afford it incur additional expense to obtain one in cases of infectious disease. This idea is, however, quite erroneous, for the frailest coffin that will decently and safely retain its contents till burial is effected, and thereafter afford least resistance to the processes of decomposition, is undoubtedly the most "Sanitary."

## Public Water Supply.

With regard to the cost of water for sewer flushing, the following is the present arrangement with the Water Company :—

That instead of charging each flushing chamber separately, the water supplied to all of them is treated as one item, which considerably reduces the total cost, as the charge is now 1s. to 1s. 3d. per 1,000 gallons, instead of about 1s. 6d. per 1,000.

According to the Company's ordinary scale of charges per 1,000 gallons for water delivered per meter during each quarter, 50,000 gallons is supplied at the rate of about 1s. 6½d.; 100,000 gallons at about 1s. 3½d.; 250,000 gallons at about 1s. 0¼d.; 510,000 gallons at about 10d., and all above 510,000 gallons at the rate of 6d. per 1,000 gallons.

On previous occasions I have ventured to offer the suggestion that in regard to cost you might possibly find it advantageous to provide and utilize deep well water for certain municipal purposes, but as then pointed out this is a question for your Engineering and Financial Departments.

In connection with the subject of the Public Water Supply I cannot do better than recall the recommendation of the Local Government Board submitted by Dr. Bruce Low, on 22nd January, 1894 :—

"WATER SUPPLY.—The Authority, with the assistance of their Medical Officer of Health, should continue to take every means in their power to ensure that the public water supply of the borough is pure in quality and adequate in quantity."

By bringing about the removal of certain very unsatisfactory conditions of refuse disposal formerly existing on the Disley Gathering Ground, the Sanitary Authority have undoubtedly done much to promote purity of the Lyme Water, and I think there is no reason to regard the supply from that source as other than an excellent one. Nevertheless *occasional* bacterioscopic examination of the filter effluents is, I desire once more to record the opinion, very desirable, if filtration is to be practised at all, and on the latter point Professor E. Frankland, F.R.S., has written : "I think the time is not far distant when Parliament will require that all surface-water shall be filtered before distribution, and it may even be considered necessary that deep well-water should also be submitted to the process in view of the risk occasionally incurred by the presence of the workmen in the wells." I therefore wish again to direct attention to the final recommendation in my Special Report on your Water Supply, as to the importance of acquiring, *if it be possible*, for any person duly authorised on that behalf by the Corporation, the *right* of entry, inspection, and sampling, at any time by day or night to, and in every part of every source from which the public water supply is obtained, and more especially



to those places in which filtration or purification is effected. Further, while it is, of course, only fair that an official of the Company should be present on their behalf whilst samples of their effluents are being taken, I assert that for obvious reasons in the public interest, it is not for any water company to require any notice whatever prior to that given at the moment of entry on the works, nor to dictate as to where and when the samples of water may be taken.

The Water Company have recently completed and opened a new deep well at Wilmslow said to be capable of yielding upwards of 800,000 gallons per day. It may, therefore, be reasonably hoped that the suffering and discomfort occasioned by an insufficient water supply, as in 1893, may be in future entirely avoided.

The Public Health (Water) Act, 1878, sect. 7, makes it a duty of every Rural Sanitary Authority, from time to time, to take such steps as may be necessary to ascertain the condition of the water supply within their district, and if there be reasonable ground for believing that any house therein is without a proper and sufficient supply of wholesome water, the authority or any of their duty authorized officers are empowered to enter the house in question, *or the premises from which the water supply may be derived*, for the purpose of ascertaining whether such house has such a supply within a reasonable distance. Sect. 11 empowers the Local Government Board to invest any Urban Sanitary Authority with all or any of these powers, and the question of obtaining them was considered during the year. The Town Clerk (Mr Walter Hyde, solicitor) advised, however, that neither the general intention of the Act, nor the actual wording of the section, appear to justify compulsory entry on any waterworks situate *outside* the district (e.g. at High Lane or Disley), and probably not even *inside*.

1 polluted private well was closed during the year.

## Public Lighting.

The Borough has hitherto been lighted by ordinary coal-gas, though the electric light has been installed in some of the factories. It is, however, now proposed to manufacture and supply **carburetted water-gas mixed with coal-gas**. Now, carburetted water-gas contains a large proportion of carbon monoxide, an intensely poisonous substance, and recent experiments by Dr. Haldane, F.R.S., have shown that, in many towns, the mixture of coal-gas and water-gas now supplied contains 3 or 4 times as much carbon monoxide as was said to be the case in former times, when coal-gas alone was used. An atmosphere with 1 per cent. of gas containing 20 per cent. of carbon monoxide would suffice to cause death, and  $\frac{1}{2}$  per cent. would cause complete helplessness. It is obvious, therefore, that the greatest care should be exercised to render it impossible for the public gas service to contain more than a certain safe limit of carbon monoxide. Dr. Louis C. Parkes, an authority on questions of Public Health, has recently stated that, in his opinion, **no gas should be laid on to domestic dwellings which contains over 10 per cent. of carbon monoxide.**

## Public Baths.

The Public Baths opened in 1886 are exceptionally good. A first class hot bath costs 4d., a second class ditto 2d. Admission to the first class plunge bath costs 6d. before, and 3d. after 12 o'clock noon. The second class plunge bath is used chiefly by boys, to whom a charge of 1d. each is made. Turkish and vapor baths are also provided. The water in the plunge baths is changed twice a week. The average number of bathers per week was 1446 in 1895.

## Meterological Station.

The instruments which have hitherto been in Vernon Park have been removed and erected in the Town's Yard, and Mr. Thomas Kay, J.P., last year generously presented the following additional apparatus:—

Sunshine Recorder, 1 ft. and 4 ft. Earth thermometers, 2 Solar Radiation thermometers, and a Terrestrial Radiation thermometer. This station was completed in November, and daily records are taken and reduced under the supervision of the Medical Officer of Health, and published in the local papers.

## Chief Industries.

Felt-hat making, cotton-spinning, bleaching, weaving, and printing are the chief industries of the town, but there are several large breweries and other important commercial undertakings. The influence of these various occupations on the health of the operatives engaged therein is a subject for future inquiry.

## The Rivers Mersey, Goyt, and Tame.

These are, of course, at present grossly polluted with the sewage and trade effluents of this and other towns. I would again draw your attention to a portion of the river bank at the bottom of Ford Street, the present condition of which is very objectionable, but which might apparently be easily reclaimed and converted into a valuable plot of land.

## The Housing of the Working Classes.

In the oldest portions of the town the houses occupied by the poorer classes are, as a rule, very insanitary, having been built many years ago, and quite regardless of the principles embodied in your modern bye-laws. In these black spots, cellar dwellings and back-to-back houses are numerous, privy midden nuisances, defective conditions of internal and external air-space and lighting, &c., abound. In many cases the houses have no slop-stones, and the tenants will not carry their waste-water to the nearest grid, but throw it on to the street or yard, the latter being often unpaved. In other cases, yards are intersected with long imperfect brick channels or gutters which cause great offence in warm weather, and danger during times of frost. It is obvious, however, that for several reasons the removal or amelioration of these houses must of necessity be gradual.

In districts of recent growth the houses of the poorer classes are very much better in every respect, but the very general existence in connection therewith of privy-pits instead of water-closets is very unfortunate.



A census has been recently taken by your Inspectors in regard to the number of (a) Back-to-Back Houses, (b) Small Single Houses without through ventilation, (c) Cellar Dwellings, with the result shown in the following table :—

District.	Wards.	Back-to-Back Houses.	Single Houses.	Cellar Dwellings.
No. 1.	Old Road Lancashire Hill Heaton Lane	426	91	109
No. 2.	Hollywood Edgeley Shaw Heath Cale Green Spring Bank (part)	367	114	43
No. 3.	Spring Bank (most of) St. Mary's       "       " St. Thomas's   "       " St. Mary's       "       "	205	309	90
No. 4.	Portwood Vernon Hempshaw Lane Heaviley St. Thomas' (very little)	265	72	13
		1263	586	255

## Action Taken Under the Housing of the Working Classes Act, 1890.

During the year 1895 the following houses were reported to you as unfit for human habitation, and notices were shortly afterwards served on the owners :—

4 and 6 Mitre Court, Bridgefield Street.  
1 and 2 Johnson's Court, Bridgefield Street.  
91 and 93 Manchester Road.  
143, Wellington Road South.  
23, 25 and 27, Cheestergate.

In the last quarter of the year I visited and carefully inspected the following houses, in regard to which the only means of scavenging the privy and ashpit was by carrying the contents of these receptacles in baskets or buckets through living rooms. This list was submitted to the Sanitary Committee on January 13th, 1896, and the necessary action ordered to be taken by the Town Clerk and Medical Officer of Health :—

High Street, Nos. 7a, 9, 27, 29, 31, 33, 35, 37, 56, 58, 60, 76-80.

Banbury Street, odd Nos. 5-23, inclusive.

Bosden Street, Nos. 6 and 8 ; 6, 8, 12-22, 36-38, 56 and 58, Union Street.

Adlington Square, Nos. 3, 5, 7 and 9. (Very foul “dry” ? ashpits.)

82, Duke Street ; 2, Lamb Street ; 22, 24, 26, John Street.

14-24 Lead Yard ; 7, 9 and 10, Holborn Street.

Ridgway Lane, 5, 17, 51 and 53.

Edward Street, 6, 14, 16 and 32 ; 42, Bamford Street.

Union Street, 11, 13, 17, 61-27, “ (No. 13 is a milk-house.)”

Park Street, 14 ; Churchgate, 35 ; 4-10, Tollbar Street.

Small Street, 5-19, including lodging-house.

“Just Another Inn,” King Street West ; 25b, Shaw Heath.

33, Moseley Street ; 30-36, Longshut Lane East.

120, Higher Hillgate ; Carrington Field Street, 5, 7, 17, 19 and 25.

5, 7 and 9, Watson Square ; 4, Sun Court.

29-31, Cambridge Street.

## House Drainage.

In the older parts of Stockport, as of most other towns, house drains are of the objectionable square bricked or flagged pattern. Occasionally, untrapped openings to these drains, within or close to the dwellings, are yet to be found, and in a small and rapidly decreasing number of cases the slop-stone waste-pipe is directly connected to the sewer, or inefficiently disconnected therefrom by a simple syphon-bend beneath the sink-tray. In addition to the water from the slopstone, these old drains receive the rain and surface water, and in some cases urine, &c., from the house, though too often the latter is thrown into the ashpits, and is an important cause of their offensive condition. These old drains are, of course, not disconnected from the sewers, and are ventilated through the rain-water pipes and through such untrapped openings as still exist.

In new buildings, glazed earthenware socketed pipe drains are insisted upon, but so far cement-joints have not been required, puddled clay being used instead. **This is very unsatisfactory, as all drain-joints should be capable of resisting the water test, which puddled clay will not withstand** With regard to ventilation and disconnection, the custom in Stockport of building in blocks of six or eight houses or more, with a 9-ft. passage between the blocks, admits of everything being drained to the back except rainwater from the front-roof. Every house has a separate drain within its own curtilage leading to the branch sewer in the 9-ft. passage at the rear. The drain of every new house provided with internal water-closet, bath, lavatory, &c., must have a separate ventilating shaft and disconnecting trap. If, however, the houses have no internal drainage fittings, it is deemed sufficient to place



one disconnecting trap in a brick chamber at the junction of the branch-sewer (in the 9-ft. back passage) with the sewer in the public street, and to provide a 4-in. ventilating pipe for every 3 or 4 houses, and a large ventilating shaft at the highest point of the system of drains belonging to each block. This arrangement is found to work well, and I am fully in accord with the Borough Surveyor, who is responsible for it, as to its efficiency for practical purposes.

In reports presented to the Sanitary Committee at various times, I have drawn attention to the facts that the rainwater pipes were, as a rule, connected directly to the drain without the interposition of a gully-trap; that the joints of these pipes were as a rule open, and that in many instances such pipes were close to bedroom windows. It is satisfactory to record that, in regard to new buildings, disconnection of these pipes at foot is now insisted upon, and that air-tight joints are also required. Of course, large numbers of these pipes in old property are still open-jointed, but on the 14th August, 1893, the Sanitary Committee passed a resolution requiring all such joints to be made good, and a considerable improvement is gradually being effected.

## Sewerage System. \*

This consists of—

- (1) A FEW OLD SQUARE FLAGGED SEWERS.
- (2) SEVERAL BROOK-COURSES AND BROOK-CULVERTS.
- (3) COMPARATIVELY RECENT AND NEW SEWERS.
- (4) THE INTERCEPTING SEWERS AND OUTFALL WORKS.

(1) A FEW OLD SQUARE STONE AND BRICK SEWERS still exist in the older parts of the town. The most important of these are in Park Street, part of Millgate (from Corporation Street to Market Place); Warren Street; Vernon Street; Great and Little Underbank; Bridge Street; Lower Hillgate; High Street; King Street East; Corporation Street; Brinksway, from the Borough boundary towards Northgate Street. Total length,  $1\frac{1}{2}$  miles.

These sewers are without any means of ventilation except through such rainpipes and untrapped openings as communicate with their branches. Access to them for cleansing purposes can only be obtained by digging down to them, a measure which has occasionally to be adopted to remove obstructive accumulations of deposit. Their very steep gradients (in most cases) render these old sewers much less liable to obstruction, however, than in towns such as Leicester, where the sewers possess little fall.

It may be here recorded that in some streets duplicate sewers exist, the old one not having been removed when the more modern one was made, and some houses still drain into the old original sewers where new ones exist in the same street.

It is, of course, very desirable that these old defective sewers should be replaced by sewers of modern construction as soon as it can be afforded, and this matter is receiving the attention of the Highways Committee, 215 lineal yards having been thus relaid during 1895.

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\* I am indebted to the Highways Department for much information on this subject.



(2) BROOK-COURSES AND BROOK-CULVERTS.—The most important of these are four in number, so far as I have been able to learn with the valued assistance of the Highways Department:—

A. Heaviley or Black Lake Brook.—Formed by (a) a stream which originates at Cherry Tree Farm, passes behind Messrs. Haines' Towel Factory, through Lake Street, across Buxton Road (opposite Mile End Hall), along the Bramhall side of the road to near Pear Tree Cottage, where it recrosses the Buxton Road, and passes to the east of Heaviley Schools, the Bamford Arms, and the Cemetery, to join Hempshaw Brook, and thence to the Tin Brook.

(b) A stream which commences near Stepping Hill, passes under and receives the sewage from a number of houses on the eastern side of the Buxton Road, and joins the preceding stream at the junction of Lake Street and Buxton Road.

(c) A stream on the western side of the Buxton Road, in the district of the Stockport Rural Sanitary Authority, commencing in the neighbourhood of the "Dog and Partridge," and eventually entering a pipe sewer on the ground of the Mile End Nurseries, through which it passes into (a).

It is known that the sewage from several houses in Kennerley Grove Lane, on Buxton Road, at the south side of Park Road and on the south side of Woodsmoor Lane enter this brook, which is, as already stated, outside your Borough.

The open portion of Heaviley Brook is excessively offensive in warm weather, and it is important that it should be energetically dealt with by the Highways Department.

B. Brownhousefold Brook.—This receives the drainage from a few houses in the Offerton Lane, and from Victoria Park. It joins Hempshaw Brook, and eventually the Tin Brook. Brownhousefold Brook is always very offensive where it crosses Banks Lane, and this nuisance should be abated as soon as possible.

C. The Tin Brook is a continuation of the Hempshaw Brook formed by the junction of Heaviley and Brownhousefold Brooks. There is no property drained directly into the Tin Brook itself, for in 1871 a sewer was laid adjacent to the brook course, and the owners of all property draining thereinto were compelled to connect their drains to the new sewer.

As the waters of the 3 preceding brooks are conserved for manufacturing purposes, it is desirable that their contamination by sewage should be prevented as soon as possible. Hempshaw Brook course in St. Thomas' Recreation Ground was culverted in January, 1895, and it is very desirable that the others be similarly dealt with as soon as it can be afforded.

D. A brook commencing (?) in the neighbourhood of Daw Bank and Gradwell Street, passing in a north-western direction through the district of Wood Street, and across Chestergate to the river. The influence which this brook has had on the position of the blocks of houses which used to drain into it, and which were built parallel to that portion of the stream which they faced, is still perceptible.

E. Stitch Brook, Heaton Norris.—This receives the drainage of the district of Whitefield and part of Wellington Road North, and also that from Manchester Road and part of Old Road. This brook, which is a public sewer, is culverted and passes under no property, traverses Brunswick Street, and eventually gets into George's Road sewer.



(3) COMPARATIVELY MODERN AND NEW SEWERS (ABOUT 50½ MILES).—I am informed that most of the remaining sewers of the town are of comparatively modern construction. The mileage of those made prior to 1870 is  $28\frac{3}{4}$ ; those made since that date have a mileage of  $21\frac{3}{4}$ . Some of these are pipe drains, others are round or oval brick sewers. Manholes and lamp-holes to the number of about 1,100 for purposes of ventilation, are placed alternately at distances varying from 150 yards in the older sewers, to about 50 yards in those of recent construction. A lamp-hole is provided at the dead end of each sewer. Each lamp-hole consists of a 9-inch pipe shaft from crown of sewer to surface of road, over which is placed a perforated cover 12-in. in diameter. Since 1893 the Highways Department has adopted a new form of rectangular cover to prevent ingress of dirt to the sewer. The manholes are 2-ft. 6-inches square in the shaft, but widen out below, forming a chamber  $2\frac{1}{2}$ -ft. by 5-ft. The only other means of ventilation on most sewers is through the rain-pipes.

During the year the provision of shaft ventilators carried up the sides or ends of houses away from all windows and chimneys made substantial progress. 62 have now been erected in the areas most affected by typhoid, and the desirability of widely extended provision of these shafts is, I am aware, fully recognised by you. In many instances a shaft has been erected close to a continually offensive manhole, and, where the offence has still persisted, the Surveyor's practice has been to occlude the manhole with a tight-fitting iron lid, which is only removed for purposes of inspection. The result of this procedure has hitherto been very satisfactory.

In regard to the provision of flushing apparatus, whereby every sewer may be flushed from its upper or dead end, the Borough Surveyor has kindly furnished the following

#### LIST AND DESCRIPTION OF AUTOMATIC FLUSHING TANKS:—

POSITION.	DESCRIPTION.	ACTION.
1.—Dialstone Lane near Buxton Road end, Stepping Hill (top of sewer).	1,200 gallons capacity, "Field's" syphon 12-inch discharge outlet.	Flushes Dialstone Lane and Boothby Street sewers.
2.—Dialstone Lane at junction with Cherry Tree Lane (top of sewer).	800 gallons capacity "Field's" syphon, 12-inch discharge outlet.	Is intended to effect the same purpose when deemed requisite.
3.—Grenville Street, Edgeley, at junction with Castle Street (top of sewer).	400 gallons capacity "Adams" syphon 9-inch discharge.	Flushes Grenville Street, from Castle Street towards Hollywood and Brinksway.
4.—St. Matthew's Road at junction with Castle Street.	Ditto, ditto.	Flushes St. Matthew's Road and Chatham Street, towards junction of Grenville Street
5.—West end of Chatham Street.	Ditto, ditto, with 6-inch discharge.	Flushes west end of Chatham Street, Carmichael Street, Torkington Street, and Greenhill Street, to Cheadle Road
6.—Bury Street, Heaton Norris, at top of sewer at Borough Boundary near Sandy Lane.	200 gallons capacity "Adams" 6-inch discharge.	Flushes Bury Street sewer throughout, down to Smith Street, and thence through same towards Penny Lane, and so to Nicholson Street East.

WHEN DISCHARGED :—

No. 2 has not been put into operation yet, as there is no property along the line of the sewer.

The others are arranged to discharge every 48 hours in summer, and every week in winter.

In addition to the foregoing, a movable flushing apparatus, capable of rapidly discharging 300 gallons at any lamphole over which it is placed, has been provided, but it is of very small capacity compared to the flushing vans in use at Salford, Leicester, &c., some of which hold 1,000 to 1,500 gallons.

The importance of perfecting, as far as is possible, the system of sewer cleansing and ventilation cannot, in my opinion, be exaggerated in regard to its influence on the public health. In an important report presented by the Special Purposes and Sanitary Committees to the Metropolitan Board of Works in 1886, the simultaneous and copious flushing of house drains by householders on stated days and hours is recommended as one of the most effectual means of flushing the sewers, and it seems probable that a great number of householders would be willing to co-operate with you in thus improving the condition of the sewers in your district. Apart from this, however, I beg again to direct your attention to the necessity which I believe exists for the provision of one or more large flushing-vans, and of many more larger automatic flushing tanks, in order that each main, district, and branch sewer may be efficiently cleansed from its upper end.

On 6th December, 1894, as recorded in my last Annual Report, the Highways and Sewers Committee requested the Sewage Outfall Committee to supply the Borough Surveyor, through Mr. Fowler, the Engineer to the Sewerage Works, with a tracing of the whole of the intercepting sewer within the borough boundaries, showing the depth and position of all manholes, ventilators, and other shafts, in order to enable the Surveyor to investigate the following matters, viz. :—

- (1) The sufficiency or otherwise of existing sewers, and the replacing of defective brick or pipe sewers along the valley from Brinksway to Portwood.
- (2) The reversal of existing sewers now flowing into the river.
- (3) The provision of sewers in roads where none now exist.
- (4) The provision of sewers at several parts of the Borough to prevent pollution of watercourses.
- (5) As to bringing up of manholes, &c., now buried, and the provision of sufficient surface and tall shaft ventilators on the old sewers.

It was pointed out by the Borough Surveyor that these matters were necessary in order to place the Corporation in a position to say at the completion of the sewerage works, that no foul matters were being discharged into the river, and also to enable notices to be served upon the property owners now polluting the river and watercourses to reverse their drains. He also stated that the inadequacy of the sewers in the older parts of the town often prevented the requirements of the Health Department as to abatement of nuisances, from being carried out.

Preliminary plans and sections have now been prepared, and the various depths of junctions requisite for connections of subsidiary sewers have been supplied to Mr. Fowler, who is having the same fixed.



### THE INTERCEPTING SEWERS AND OUTFALL WORKS.

The sewage and rainfall requiring to be dealt with in the Borough are at present discharged direct into the river within the Borough from about 30 main-outlet sewers and watercourses. To intercept this sewage and surface water, very extensive works are being carried out under the supervision of Mr. A. M. FOWLER, M.I.C.E. at a cost of over £100,000. The principal feature of the Engineer's scheme is the provision of 5 main intercepting sewers, the course of which may for the purpose of future reference be very briefly outlined as follows :—

1st MAIN SEWER (3-ft. to 7-ft. diam.) Commences opposite Vernon Park Gate, traverses Carlington Road, Great Portwood Street, Wharf Street, and thence beneath Castle Hill to opposite the White Lion, in Underbank, and forward through Chestergate, Brinksway and Cheadle Heath, to terminate at Heathside Farm on the left bank of the Mersey, 300 yards west of Messrs. Melland and Coward's bleachworks.

2nd and 3rd MAIN SEWERS (12-in. to 18-in. and 18-in. to 24-in. diameter). Both commence near Stringer Street, Newbridge Lane. One passes eastward and the other westward to join the 1st main sewer near Vernon Park, and the east end of Queen Street, respectively.

4th MAIN SEWER (3-ft. diam). Collects sewage from district between Lancashire Hill and the River Tame, crosses beneath junction of Rivers Tame and Goyt, and traversing King Street, joins the 1st main sewer near Queen Street.

5th MAIN SEWER (18-in. diam). Will intercept sewage from Heaton Norris side of river, tapping the important main sewer in Heaton Lane, Travis Street, and Brinksway Road. Commencing near Brinksway Bridge, it crosses almost at once in a straight line under the bed of the river to join the 1st main sewer on the Brinksway Side.

At the Outfall Works the sewage will be pumped 17 feet 6 inches into tanks, there treated chemically, and then discharged intermittently upon underdrained and levelled filter beds, through which the effluent thus purified will pass into the river. The Corporation possess 95 acres of land at Heathside Farm and it is proposed to appropriate by degrees 63 acres for sewage purification. The Engineer states that it is well adapted for this purpose, being composed of sharp gravel and sand.

Mr. Fowler has made provision in the outfall sewers for the sewage from upwards of 140,000 people, and at the Outfall Works, which can at any time be extended, for dealing with the sewage of 107,400 persons, the figures at which he estimates the population 30 years hence.

I am informed by the Engineer that these works may be said to be now nearly completed, with the exception of the necessary preparation of filter beds and outfall land over which the treated sewage will flow. Tenders for this work have been invited.

### THE CHEMICAL TREATMENT AND FILTRATION OF SEWAGE.

I understand that at your works lime will probably be employed as a precipitant, but that the exact details of chemical treatment have not yet been finally decided upon. This matter is one which will require most careful consideration if you are to escape the troubles and mistakes in this respect of other large manufacturing towns, especially in regard to money wasted on the use of "patent" precipitants and filtering media, all of which are very costly and more or less inefficient in practice.

With regard to the employment of lime as a precipitant the tendency undoubtedly is to limit its use to as small a quantity as may be, *firstly* because, as has been shown by Mr. Dibdin, the chemist of the London County Council, an excess of lime dissolves the suspended organic matter of the sewage, greatly adding to the work of filtration; *secondly*, because the quantity of sludge is proportionately reduced; and

*thirdly*, because an alkaline effluent putrefies very offensively with river mud. Mr. Dibdin says that "if the whole of the chemically effective strength of the lime is to be utilized, it must be in **solution** and **not in suspension**." In other words, a few grains of lime **in solution** (i.e. as lime-water) will effect as much work as three or four times the quantity of milk of lime. For London sewage he recommends 3·7 grains lime **in solution**, and one grain of protosulphate of iron per gallon of sewage.

With regard to **filtration of sewage**, the London County Council has recently published an important record of experiments carried out by Mr. Dibdin, to ascertain the best material for intermittent filtration, burnt ballast, sand, pea-ballast, coke breeze, and a "proprietary material" being respectively tried, on filter beds  $\frac{1}{200}$ th of an acre in extent. From a circular letter issued 21st August, 1895, by the owners of this proprietary substance, I learn that the material thus referred to is polarite. Mr. Dibdin's results were as follow :—

(1.) **Purification with coke-breeze exceeded that obtained with any other material** being 62·2 %, as compared with 61·6 with polarite, and 43·3 % with burnt ballast.

(2.) Polarite produces a better looking effluent than coke-breeze, but the cost of polarite is prohibitory, and the actual purification it effects is rather less.

(3.) The conditions of success were found to be porosity, and the consequent power of re-absorbing atmospheric air.

To ascertain the rate at which it was possible to pass tank effluent through a filter, a second series of experiments were carried out, —each filter covering one acre,—and the following conclusions arrived at, viz. :—

(1.) That the filter must be **gradually** brought to its maximum efficiency by cautious increments in the quantity of applied sewage. This condition will be shewn by the constantly increasing proportion of nitric acid in the filtrate.

(2.) That the applied sewage must be left in contact with the micro-organisms by resting in the filter for a sufficient time.

(3.) That after each effluent has been dealt with, the micro-organisms must be supplied with air, by emptying the filter from below, and thus drawing air through its interstices. The filter must "rest" for an hour or more between each filling, and a longer period of æration, say twenty-four hours, be allowed once a week.

(4.) The severest frost does not interfere with filtration.

(5.) That so worked, as much as 1,000,000 gallons per day may be filtered through one acre of coke-breeze.

(6.) That the life of such coke-breeze filters is practically without limit.

The **coke-breeze filters** consisted of powdered coke-breeze to a depth of four feet, with three inches of superimposed gravel to keep it from floating.



Similar experiments with cinder and coke-breeze filters were carried out by Sir Henry Roscoe and Mr. de Courcy Meade, in Manchester, from January 22nd to March 22nd, 1896, and in reporting thereupon Sir Henry Roscoe states "that though the true aim of purification, viz., the conversion of the nitrogenous organic matter into inorganic nitrogen, was not attained in the limited time during which the filters were worked, the total purification effected may be on the whole considered satisfactory." He adds that his experience leads him to the opinion that the adoption of artificial filters worked intermittently is a move in the right direction.

It must, moreover, be borne in mind that at your works the further purifying process of irrigation over suitable land will be superadded to those of precipitation and intermittent filtration.

If may be added that a system of forced æration of the material used as the filtering medium has recently been tried in this country, **air being continuously forced under pressure into the body of the filter**, so as to afford the bacteria the necessary means of subsistence. The test of practical working and experience has yet, however, to demonstrate to what extent this method actually possesses the advantages claimed for it.

## Excrement and Refuse Disposal, and Scavenging.

It is estimated that there are at present between 5,000 and 6,000 privy-pits and some 1,600 water-closets with dry ashpits, including 400 closets of the slop-water type. These clean-water and slop-water closets are to be found chiefly in recently-built houses, and are gradually increasing in number. The provision of closet accommodation to mills is, with a few exceptions, in an unsatisfactory condition, and though notices under the Factory Act to remedy this defect were, in 1894, drawn up by the Borough Surveyor's Department, I understand that nothing further has yet been done. Some large schools, moreover, possess only the objectionable midden-privy closets, but there has been some improvement in this respect during the year under present notice. In one large mill, in one school, and in a few other isolated cases pail closets are used. In a few instances, in the Newbridge Lane district, closets discharge directly into the river or on to its banks, and necessarily occasion much offence.

In each Annual Report it is the statutory duty of the Medical Officer of Health to again call attention to the sources of ill-health which exist in his district, and I feel that no duty is more imperative upon me than that of urging once more upon the Council the necessity of early and seriously facing the evils of the existing defective and mediæval midden-privy system which, in the words of the official memorandum presented to you in 1895 by the Medical Department of the Local Government Board, is "a source of nuisance of the gravest kind, and cannot fail to be injurious to health," a warning repeated in the Board's letter of 8th February, 1896. I have pointed out on previous occasions that many of the existing privy-pits, especially in the older parts of the town are faulty in the extreme; none that I know of can be considered satisfactorily watertight, while a very large number being very leaky are responsible for wholesale soil-pollution. In many instances these foul receptacles are within a few feet of the door, and I know of



many actually abutting on the walls of dwelling houses (there were 186 in 1885, and the great majority still exist), their liquid contents, of course, soaking into the foundations. In a few instances privies are situated under occupied rooms, but these are at present being dealt with. In the newer parts of the town where houses are built in terraces one privy-pit ordinarily serves for two houses, but in the numerous courts of the older parts, where air circulation is at a minimum, one enormous fosse usually exists in the middle of the yard, the common receptacle for the excreta and house refuse of the occupants, of from six to, in one case, 36, and in another 40 habitations. Owing to their size, structural defects permitting dampness, and the very usual deposit therein of slops, vegetable and animal refuse, these pits are generally excessively foul, and the air of the courts in which they are situate offensive to a degree which must be experienced, especially in hot weather, to be realised. Further, atmospheric pollution and fouling of the surface of yards and streets, of gullies, drains, and sewers, which is inseparable from the most careful scavenging of these privy pits, is an ever present nuisance of the most aggravated kind.

As to the manner in which human health, apart from comfort, is liable to suffer from such conditions, it is only necessary to refer to the typhoid outbreak of 1893, in which the influence of midden-privies is disseminating the disease afforded such remarkable confirmation of the well-known official words of the late Sir George Buchanan, M.D., F.R.S.:—"In enteric fever the evacuations should be regarded as capable of communicating an infectious quality to any nightsoil with which they are mingled in privies." I have before alluded to the opinions formed by Messrs. Andrews and Laws (as the result of patient inquiry relative to the micro-organisms of sewer air) that much in the way of typhoid (and perhaps diphtheria) that has been erroneously ascribed to sewer-air is "really largely due to subsoil air polluted by the constant filtration of excremental matter." I have also commented upon the terribly excessive mortality from infantile diarrhoea which persistently inflates the Stockport death-rate, and I desire once again to place on record my opinion that without any manner of doubt it will continue to do so, as long as wholesale pollution by leakage from midden-privies continues to supply the soil with the putrid excremental organic matter known to be so favourable to the life-processes of the micro-organism associated with this malady (*vide* page 22). Finally, the following significant figures as to the mortality from these filth-diseases (typhoid and diarrhoea) in Stockport, as compared with England and Wales, speak for themselves.

DEATH RATES PER 1000 IN

STOCKPORT.												England and Wales.
Year.	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894	1884 to 1893	1884 to 1893
Typhoid Fever }	0.23	0.55	0.54	0.47	0.1	0.2	0.2	0.2	0.67	0.1	0.32	0.17
Diarrhoea	0.74	1.3	1.2	0.7	0.7	1.1	0.9	0.7	2.70	1.3	1.13	0.73
All Causes	26.9	26.4	26.9	25.03	23.5	26.5	26.9	22.7	23.9	18.7	24.7	19.2



In reporting so plainly and strongly on these matters, I believe that I am only acquitting myself of *the* most serious responsibility of my office. I am also certain that the evils I have referred to are to a large extent recognised and deplored by the Chairman and Members of the Sanitary Committee and Council generally, and I am aware that the vastness and great difficulty of the question, together with the hitherto imperfect sewerage system and the incubus of important works of general improvement, are the chief reasons that it has not up to the present been comprehensively dealt with by you. It is true that by resolution of February 19th, 1894, the Medical Officer of Health was "empowered to require any insanitary privy which is a nuisance or injurious to health to be abolished and a water-closet substituted therefor," but proceedings under this resolution have not so far been enforced to the extent that could be desired by those who view the matter mainly from the standpoint of the public health. I admit, moreover, that there are practical difficulties in the way of doing so, for *all* the older privies, and to a lesser extent *all* the new ones also, are a nuisance and injurious to health, and until some general scheme is promulgated many property owners are very ready to resent, as invidious and unfair, any attempt to enforce water-closets, no matter how grossly insanitary the existing conditions may be. I therefore submit, especially in view of the approaching completion of your sewerage scheme, that the time has now arrived for seriously considering what is without doubt by far the most pressing present requirement of your Borough, and that which is most essential to place Stockport, as all hope eventually to see it, in the van of the healthier manufacturing communities.

Apart from the question of the danger to health occasioned by the present system, I beg to direct your attention to the very heavy cost. The Borough Treasurer has kindly extracted for me the expenditure on Night Scavenging alone for the 12 months from 1st January to 31st December, 1895, which totalled some £4613 8s. 2d., excluding capital charges. Assuming that the Corporation decided to contribute in suitable cases towards the conversion of existing midden privies, the annual saving of a large proportion of this large sum, which would eventually result from the general adoption of the water-carriage system, would probably in a very few years cover the cost of any reasonable assistance to property owners. I would therefore suggest that the financial aspect of this question might with advantage be referred to the Borough Treasurer.

### Working experience of Water-Carriage in other towns.

In the beginning of the year under notice I received your instruction to inquire as to the adoption and working of the water carriage system in other large communities. The following is the result of a series of 5 questions addressed by me to 25 large towns having experience of the system as applied to workmen's dwellings :—

QUERY 1.—"What (if any) portion of the cost of conversion to water-carriage is borne by the rates in regard to privies or pail-closets : (a) when dilapidated and very offensive, (b) when in fair structural condition ?" In only about six towns is any contribution whatever made. In Accrington £2, and in Hanley £1 per closet is allowed for conversion of structurally good *pail-closets* only, the pail being returned to the Corporation ; in Burslem one-half, and in Leeds and Sheffield one-third of the total cost in all



cases ; in Stafford it is proposed to allow from 45s. to 60s. per closet of an estimated total cost of 82s. 6d., and I have since learned that Ashton-under-Lyne has obtained Parliamentary powers to convert any privy at the Corporation's expense.

**QUERY 2.**—"Have slop-closets been substituted for privies to any extent, and if so what pattern is generally used?" Waste-water closets have been extensively adopted in Burnley, Nelson, Accrington, Southport, Birmingham, and Crewe, and a smaller number are in use in Newcastle-on-Tyne, Barnsley, Burslem, and Fenton. In Stockport there are about 400. The patterns most generally favoured are Duckett's "B" and the "Stafford." Allen's type prevails in Birmingham, whilst in Southport the closet used is a modification of the Bristol eject, which works well.

**QUERY 3.**—"Have slop-closets in low-class property been a continual source of expense to owners owing to carelessness of tenants?" The general experience appears to be that when first fixed such closets are liable to be blocked by the introduction of unsuitable solid bodies, but that when the users become accustomed to these conveniences such occurrences are comparatively rare. Obviously a manhole or inspection shaft on the closet side of the intercepting trap between drain and sewer tends to still further prevent them. Some makers, it is stated, undertake to keep their closets in repair for 1s. 6d. per annum. At Burnley and Nelson importance appears to be attached to the employment of 6-inch or 9-inch drain connections, as stoppage has not been nearly so frequent when 4-inch drains have been replaced by the larger sizes. From observations covering a period of a year or more, it was found in Burnley that 6·5 per cent. of slop-water closets were blocked, as compared with 37·4 per cent. clean water closets ; in Nelson 4·5 per cent. of *all* the slop-closets were stopped, whereas 6·5 per cent. of fresh-water closets were cleared by the sanitary authorities alone, in addition to a large number remedied by private plumbers. Eccles showed 13 per cent. of stoppages of slop-closets, or 10 per cent. excluding those due to sewer obstructions.

**QUERY 4** related to the prosecution of careless tenants under the Public Health Acts Amendment Act, 1890—(a) for throwing into a drain anything that would injure it, or obstruct the free flow of sewage ; (b) for not keeping sanitary conveniences in a cleanly condition. In Sheffield and Warrington proceedings have been taken for both offences ; in Preston and Nottingham for (a) only, and in Blackburn, Bradford, Birmingham, Halifax, and Manchester for (b) only. In Newcastle-on-Tyne similar action is said to have been taken under Public Health Act, 1875, s. 25 (which seems somewhat incomprehensible), and at South Shields under the nuisance bye-laws. In Burslem and Nelson cautionary notices threatening prosecution were posted in each closet. On the whole, therefore, these provisions of the Amendment Act have not been largely availed of, but the effect has been salutary where they have been enforced.

**QUERY 5** had reference to the employment of men by the sanitary authority specially to see that slop-closets and w.c.'s in cottage property are kept in proper condition. In Accrington, Barnsley, Burnley, and Stafford men are specially engaged for this purpose, and in Leeds and Sheffield for looking after the latrines. In Burnley it is stated that efficient inspection costs less than 2d. per annum per closet.



Personally, I think that systematic inspection of water-carriage appliances will be absolutely essential to their efficient working, when used by the rougher element of manufacturing communities, and for such supervision the diminished cost of scavenging will more than repay. In Leeds and Sheffield the introduction of slop-water closets is not greatly favoured. In court yards and places open to the public, where it may not be advisable to have ordinary w.c.'s, latrines with automatic flushing arrangements under Corporation control are preferred, and have hitherto given considerable satisfaction. From careful observations, in 1892, at Sheffield, it appears that the liability to freezing, which is so usually urged as an objection to most water-carriage appliances, has been rather over-rated, and this conclusion is quite in accordance with that arrived at in Nottingham during the severe winter of 1894-5.

With regard to the economy of water effected by the use of slop-water closets it has been estimated that in Nelson there is a saving of two gallons per head per day. Mr. McCullum, the late Borough Engineer of Blackburn, states as the result of a series of observations, that in houses provided with a w.c. 4.57 gallons were used *more* than in similar houses without w.c.'s. A considerable saving is believed to be effected in Burnley, where the public supply is rather limited, but no figures are published.

The question of economy of water naturally suggests that of **concentrated sewage**, the objection urged by Dr. George Reid, in a report to the Staffordshire County Council, on the use of slop-closets. It is most important, however, to remember in considering this matter, that the small area with which Dr. Reid experimented at Stafford was drained on the strictest "separate" principles. It therefore appears to me that in north-western towns, in which the rainfall is between 40 and 50 inches, where much water is used in manufacturing processes, and where the separate system is practically unknown, Dr. Reid's conclusions, however interesting theoretically, can have very little, if any, practical application.

In conclusion, the results of enquiries and observation in regard to the introduction of water-carriage appliances may, I think, be thus summarized:—

(1.) That within a house, or in good working-class property where the flushing cistern can be placed in the scullery and the connections properly protected, a good type of wash-down closet should be used.

(2.) That for open courts and yards, latrines with automatic flushing tanks, and under municipal control, constitute the most suitable provision.

(3.) That waste water-closets have a useful application in other cases.

I wish to distinctly state, however, that in my opinion slop-closets at their best are but an expedient compromise between the theoretically desirable and the practically obtainable. That such a compromise is far in advance of the filthy conservancy methods that have so generally obtained in Lancashire, few, I think, will be prepared to deny. Those actively concerned with sanitary administration in northern factory towns know the practical difficulties which interfere with the adoption of counsels of perfection, and to condemn slop-water closets where we cannot secure the most perfect form of water-carriage is, I submit, similar to refusing half a loaf when the alternative is no bread.



Pending the consideration and adoption of some such general scheme of water-carriage in Stockport, it is most desirable that the erection of privies in connection with new buildings be prohibited. When so much money is being expended on intercepting sewers and on scavenging the existing privies, and when the nuisance from the latter is already so aggravated, it is surely unsatisfactory and discouraging to find that privies have been erected in connection with 180 new buildings during the years 1894 and 1895. Further, a minimum superficial area of 4 feet by 5 feet is insisted on by resolution of the General Purposes Committee, dated 21st March, 1894, which also permits these receptacles to be "not more than two feet below the level of the adjoining ground." I would therefore again suggest that this resolution might with advantage be reconsidered, inasmuch as the model bye-laws recommended by the Local Government Board order that a fixed receptacle must be in every part *three inches above the ground* level, and its capacity must not exceed eight cubic feet. The Board have further pointed out by letter dated 8th February, 1896, that a local authority has no power to dispense with the requirements of its bye-laws.

### Scavenging: Its efficiency or otherwise.

Hand-in-hand with the subject of the foregoing section is that of scavenging of privies and ashpits. This work is carried out at night by a staff of 18 gangs of three men, each with a cart. The contents of each privy are thrown out through the pitch-hole into a barrow by a man working inside the pit, the barrow contents are then heaped in the public road, and finally loaded into carts, which take it either to farms at Cheadle or elsewhere, or to the tips at Whitehill and Newbridge Lane. Often the contents of privies are so liquid that buckets have to be used for their removal, and in spite of every care much fouling of yards, roads, and gullies must almost invariably occur. I have several times suggested that the barrows and buckets be emptied straight into the night carts instead of being first heaped upon the ground, but I am informed that this is quite impracticable as it would very materially increase the cost of scavenging.

I have again to invite your serious consideration of the practicability of a more general and methodic "block-system" of privy scavenging, particularly in the numerous cases in which one pit is used by the inmates of 12 or more houses. At present the adoption of this system is not universal in Stockport. I am informed that the main reason for this is the great variation in size of the privies, but this contention appears to me to be weakened by the fact that in at least one town, viz., Eccles, in which similar conditions exist, the introduction of the block system of working has resulted in much more efficient and economical scavenging. Another reason put forward is the very natural dislike of those using large privy pits to frequent recurrences of the serious nuisance inseparable from their scavenging. Consequently, while some privy pits are emptied every three months, many others, I am informed, are scavenged but once in six or even twelve months. The shortest of these periods is about six times too long, but on the other hand it is useless to ignore the fact that the disturbance and removal of these privy contents usually occasion a much greater temporary nuisance than that arising from



the half-full privy pit. I feel convinced that the whole question of night scavenging might advantageously be made the subject of inquiry and reconsideration by the Sanitary Committee or some of its members, and that even if it be impracticable to comply with the Local Government Board's recommendation of fortnightly removal, material progress in the direction of more frequent scavenging might be effected.

Appended is Chief-Inspector Marshall's return of scavenging work done during the year.

#### DAY SCAVENGING DEPARTMENT.

1,496 loads of refuse have been removed from 946 dry ashpits, or nearly 1·6 loads per pit.

5,718 loads of sweepings and 1,598 loads of snow have been removed from the streets.

498 loads of cinders	} have been put on the streets.
406    ,,    sand	
3,923   ,,    water	

The expenditure under this heading from January 1st to December 31st, 1895, was £3610 15s. 7d., or equal to very nearly 6s. per load handled.

#### NIGHT SCAVENGING DEPARTMENT.

26,445 loads of refuse have been removed from 9,982 privy pits, &c., which averages 2·6 loads for each pit, which is included in this total. The expenditure under this heading from January 1st to December 31st, 1895, was £4928 2s. 9d., which works out at about 3s. 8 $\frac{3}{4}$ d per load.

### Tips.

There are at present two tips within the Borough, viz., one in Newbridge Lane and the other in Charles Street, Hillgate.

Many verbal complaints were received in reference both to Charles Street and Newbridge Lane, and the deposit of faecal matter at Charles Street has been discontinued. From time to time the tipping of fishmongers' and butchers' offal here has given rise to great offence, but through the efforts of the Chairman of the Sanitary Committee, arrangements have been made for the destruction by fire of most if not all of this refuse, which is decidedly a move in the right direction.

Faecal matter is, however, still deposited here in large quantities close to dwellings and to the popular pleasure resort, Vernon Park. In addition, as has been before pointed out, the tip is on the "strike" or "outcrop" of a stratum of porous Permian Sandstone, which constitutes a, perhaps remote but certainly possible, source of danger to the deep well water of the town.

If recourse *must* be had to tips for the disposal of a town's refuse, such sites only should be chosen as are well removed from human habitation and without danger to public water supplies, for it goes without saying that large filth accumulations close to dwellings must exercise an evil influence on the health of the inhabitants, and especially of children. Where tips cannot be obtained under the conditions named, destruction by burning is the best means of dealing with town's refuse, and even if this method be not applied to all refuse it is very desirable that butchers' and fishmongers' refuse should be thus disposed of.

### Bye-Laws and Special Regulations.

The following is a list of the existing Bye-Laws, with the date on which they were sanctioned :—

- 1.—Relating to Public Baths, 10th August, 1858.
- 2.—Relating to the management of the Markets, November, 1862.
- 3.—*Relating to the Regulation of Vernon Park, 25th May, 1864.*
- 4.—As to level, width, &c., of New Streets and Sewerage thereof.
- 5.—With regard to the prevention of Nuisances arising from Snow, Filth, and the keeping of Animals.
- 6.—As to cleansing Footways, &c., Removal of Refuse, and cleansing of Privies, &c.
- 7.—For the Regulation of Common Lodging Houses.
- 8.—For the Regulation of Slaughter Houses.
- 9.—*For the Regulation of Hackney Carriages.*
- 10.—With respect to New Streets and Buildings, 6th February, 1884.
- 11.—Dairies, Cowsheds, and Milkshops' Regulations, 2nd May, 1894.

5th August, 1865.

The revision of the Bye-laws of February, 1884, with respect to New Streets and Buildings, was commenced by a special sub-committee appointed in September, 1893, but I understand that the matter is still in abeyance. This is regrettable, for it is a most important question, the amendment of certain regulations, especially those with respect to the drainage of buildings, to privies, ashpits, &c. being very essential. When this revision is completed, it is very desirable that advantage be taken of section 23, sub-section 2, of the Public Health Acts Amendment Act, 1890, to make such revised bye-laws applicable to buildings erected before the Local Government Acts came into force.

The other Sanitary Bye-laws, though in a few minor points somewhat behind the times, are on the whole fairly well adapted and sufficient.



## General Inspection of the District.

The Borough is, for the purposes of inspection, divided into four districts, one of which is allotted to each of your Inspectors. The work was in general carried out to my satisfaction, and a large amount was efficiently accomplished, as will be seen from the appended summary of notices served:

Inspector.	District.	Provisi'n and re- pair of gully- traps and drains	Repairs & alter- ations of privy- pits.	Disconn- ection of waste- pipes from sewers.	Provisi'n of water- closets.	Removal of manure and other refuse.	Cleans- ing of premises	On account of over- crowding	Miscel- laneous.	Totals.
J. Marshall.....	Portions of St. Mary's Spring Bank, and St. Thomas' Wards .....	21	10	6	13	1	9	2	2	64
C. R. Billingham	Lancashire Hill, Heaton Lane, and Old Road Wards	61	43	18	21	7	47	...	18	215
J. H. May .....	Hollywood, Edgeley, Shaw Heath, Cale Green and a portion of Spring Bank Ward .....	153	70	13	7	22	21	2	28	316
W. Ramscar ..	Portwood, Vernon, Hemp- shaw Lane, Heaviley, and portions of St. Mary's and St. Thomas' Wards...	36	33	5	4	4	71	..	5	158
	Totals .....	271	156	42	45	34	148	4	53	753

In addition, in an increasing number of instances nuisances were abated and improvements effected as the result of verbal representations to property owners. As the service of formal notices was not necessary in these cases, they are not included in the foregoing table.

Demolition of foul privies and their replacement by water closets with the necessary drain connections and ventilation was effected in 28 instances.

In the following statement is set forth the number of blocks of buildings and of the included houses the drainage of which was completely rearranged during the year :—

DISTRICT.	WARDS.	BLOCKS.	CONSTITUENT HOUSES.
No. 1	Old Road ... .. } Lancashire Hill..... } Heaton Lane... .. }	27	104
No. 2	Hollywood ..... } Edgeley ..... } Shaw Heath ..... } Cale Green..... } Spring Bank (part) ..... }	23	133
No. 3	Spring Bank (most of) ... .. } St. Mary's           ,, ..... } St. Thomas's       ,, ..... }	28	73
No. 4	Portwood ..... } Vernon ..... } Hempshaw Lane ..... } Heaviley..... } St. Thomas's (very little) .... } St. Mary's           ,, ..... }	22	91
	TOTALS. ...	100	401

I have again to draw attention to the gross incompetency of many of the men who are employed by private individuals to relay drains and comply with other notices of a similar kind, and who have not as a rule, the least idea of how such work should be done. In repeated instances the Inspectors have to almost stand over such labourers, to prevent the work being disgracefully “scamped.” It would be much more satisfactory, from a sanitary point of view, if, as in Manchester, such work were undertaken by the Corporation’s own men, or failing this, that a list of efficient drainlayers be registered. The extension to the provinces of that provision of the Public Health Act (London), 1891, which enacts a heavy penalty for “scamping” work done in compliance with notice, is also most desirable.

COMPLAINTS OF NUISANCES BY THE PUBLIC.

116 of these were registered in the office, and, in addition, a considerable number were made verbally to the Inspectors whilst going through their districts.



## Dairies, Milkshops, and Cowsheds.

The number of dairies and milkshops on the register was 117 and these were frequently inspected. In a few instances special inspections of milkshops were made by myself in connection with cases of infectious disease, but no evidence of the spread of the disease by the agency of milk was forthcoming. The great majority of these milk vendors live in small houses, the front room of which is used for the sale of small quantities of milk, and usually in addition as a general shop also. Fortunately, however, most of the milk sold by these retailers never enters their houses, but is transferred at the door from the farmer's cart to the milkseller's. On the other hand I have occasionally noticed empty milk cans standing in yards in close contiguity to privy pits, and it is unfortunately the usual thing to find large bowls of milk on retailers' counters, exposed to the exhalations of customers and dust from the streets. This, of course, might be to a large extent avoided by placing a cover over the milk-bowl, but for some reason or other this is rarely done.

The number of cowsheds within the borough is 19, viz., two in Heaton Norris, one in Cale Green, two in Edgeley, two in Vernon, three in Hempshaw Lane Ward, and nine in the semi-rural Heaviley Ward. During the year these places were periodically inspected with regard to their cubic capacity, drainage, ventilation, water supply, and general adaptability. The defective cowshed at Nangreave Farm has been done away with, and a more suitable building is now in use.

## Bakehouses.

These numbered 52, and were regularly inspected during the year. In the majority of cases their condition is fairly satisfactory, but as regards ventilation and lighting a few cellar bakeries are far from perfect. It is satisfactory to record that the Factory and Workshops Act, 1895, prohibits the future use of cellars for this purpose.

## Slaughterhouses. Meat Inspection.

These numbered 46 and were regularly inspected each week. Some of them are very good, the majority are fairly good, while a few of them are structurally ill-adapted for the use to which they are put. In every case a good supply of water is laid on, and they are kept in a fairly satisfactory condition. Most of them are unfortunately situated in crowded localities and in close contiguity to dwelling-houses.

In connection with the question of meat inspection, it is very desirable that in Stockport, as in every other large town, a qualified meat inspector be employed, and where the services of a well-taught veterinary surgeon *with special experience of butchering and meat inspection* cannot be retained, an intelligent butcher is probably the best man for the post. But in order to enjoy really efficient meat inspection, it is essential that slaughtering for human food should only be permitted in public abattoirs, where the internal organs of each animal may be examined in connection with the carcass to which they belong. Under existing conditions animals can be quietly killed, diseased internal organs made away with, and other signs of disease rendered unrecognizable, at any one of the 41 slaughterhouses, at any time of

the day or night. I would therefore again draw attention to the desirability of providing a public abattoir as soon as it can be afforded, but in order that such an institution may not become a white elephant on your hands, it is absolutely necessary that powers be previously obtained to enforce the closure of private slaughterhouses within a reasonable period of the opening of the abattoir.

Three seizures of unsound meat were effected during the year. Two of these were made on the same date at different shops owned by one individual but owing to various circumstances no legal proceedings followed. In the third instance a sentence of 6 weeks' hard labour was imposed.

### **Tripe Dressing Establishments.**

The places number 17, and during the year were regularly inspected. With some two or three exceptions they are all fairly suitable for the use to which they are put; they all possess a plentiful supply of clean water, and were kept fairly well lime-washed and cleansed.

### **Offensive Trades, &c.**

These include :—Knacker and bone boiler, three tanners, one tallow-melter, two gut-scrapers. Complaints in regard to the tallow melters' trades were received and personally investigated by myself as well as by your Inspectors.

### **Workshops.**

The work of inspection was regularly carried out during the year. Cases of overcrowding and want of cleanliness were few in number, the most usual faults being defective and insufficient closet accommodation, and imperfect ventilation. The latter is often a most difficult matter to remedy. To provide a constant supply of fresh air without creating cold and draught is, as you are aware, of paramount importance from a hygienic point of view, but while the physical difficulties in doing so are very great, the inclinations of the workers are even a greater obstacle, for such windows and flues as do exist are carefully fastened or stopped up in most cases, except in the hottest weather,

### **Common Lodging Houses.**

There are 22 common lodging houses, registered to accommodate 778 persons nightly. I have repeatedly inspected these houses and am of the opinion that only four of them are even reasonably fit for the purpose for which they are used. The lodging houses were inspected regularly at least twice a week.



One person was fined 20s. and costs for continuing to receive common lodgers in an unlicensed house.

It is a matter for surprise to me that more good and respectable common lodging houses do not exist in Stockport. In Edinburgh and other towns, where model lodging houses have been started by private individuals or associations, and placed in charge of reliable deputies, they have been largely availed of, not only by travellers, but by respectable working men in constant employment, and have proved decidedly successful financially.

### Smoke Nuisances.

73 observations were taken during the year. The method adopted is for two inspectors to watch not more than three chimneys for two consecutive hours, marking, in a suitable book, the proportion of each five minutes of the two hours during which dense, medium, and no smoke is emitted from each chimney. This occupies most of the working morning or afternoon of two inspectors, and, as conviction implies no moral disgrace whatever and the fines are nominal, little or no improvement results, and it is not difficult to employ the inspectors more profitably. This is the reason why the number of observations now recorded is small. The time-limit for dense black smoke is seven minutes in two consecutive hours, and this was exceeded in 12 cases by periods varying from 9 to 17 minutes.

Apart from the evil of actual air pollution, the emission of such quantities of smoke has indirectly a most pernicious effect on ventilation of dwellings, as people who like to keep their houses clean, are very naturally disinclined to keep their windows open in a smokey atmosphere.

### Houses Let in Lodgings.

These are not yet registered, and there are no bye-laws for their regulation, but their number is considerable, and the matter is one for future consideration.

### The Canal.

Two notices were served on the M. S. & L. Ry. Co. to clear the Canal of carcasses of dogs, and a third to repair the canal bank at Bankfield Street. There are no registered canal boats. A few barges exist, but they are not inhabited.

### Sale of Food and Drugs Act.

74 samples were taken under this Act during the year, and submitted to the Public Analyst, particulars of which are as follows:—Milk, 36; butter, 12; coffee, 12; lard, 8, and mustard 6. In 7 instances, in each case milk, the sample was found to be adulterated, and the vendor convicted and fined (see p 69)

The following cautionary notice calling the attention of vendors of food, &c., to the provisions of the Public Health Act with respect to the sale of unsound food was again widely distributed through the Borough during the summer months :

#### NOTICE TO FOOD VENDORS &C.

The attention of Food Vendors is hereby specially directed to the provisions of the Public Health Act. 1875, Sections 116 & 117, which are in substance as follows :

Any Meat, Poultry, Game, Fish, Fruit, Vegetables, &c., exposed for sale, or deposited in any place for the purpose of sale, or of preparation for sale, and intended for the food of man, which appears diseased, or unsound, or unwholesome, or unfit for food, may be seized by the duly authorized officials and carried away, to be dealt with by a Justice.

If it appears to the Justice that any article of food so seized is diseased, or unsound, or unwholesome, or unfit for the food of man, he shall condemn the same and order it to be destroyed, and the person to whom the same belongs, or did belong at the time of exposure for sale, or in whose possession, or on whose premises the same was found, shall be liable to a penalty not exceeding Twenty Pounds for every Fish, or Piece of Meat, Flesh, or Fish, or any Poultry or Game, or for the Parcel of Fruit or Vegetables so condemned, or at the discretion of the Justice, without the infliction of a fine to Imprisonment for a term of not more than Three Months.

By Order of

THE SANITARY COMMITTEE.

June, 1895.



## LEGAL PROCEEDINGS DURING THE YEAR 1895.

OFFENCE.	RESULT.	SENTENCE.
Emitting dense smoke from mill chimney ... ..	Convicted	£ s. d. 1 0 0 and costs
Do. do. do. ...	Do.	0 10 0 and costs
Do. do. do. ...	Do.	0 5 0 and costs
Do. do. do. ..	Do.	0 7 6 and costs
Do. do. do. ...	Do.	0 10 0 and costs
Do. do. do. ..	Do.	1 0 0 and costs
Do. do. do. .	Do.	0 10 0 and costs
Do. do. do. ...	Do.	1 0 0 and costs
Do. do. do. ...	Do.	1 0 0 and costs
Do. do. do. ...	Do.	1 0 0 and costs
Do. do. do. ...	Do.	costs only
Do. do. do. ...	Do.	0 10 0 and costs
Selling adulterated milk ...	Do.	2 0 0 and costs and 10/6 Analyst's fee
Do. do. do. ...	Do.	1 0 0 and costs and 10/6 Analyst's fee
Do. do. do. ...	Do.	2 0 0 and costs and 10/6 Analyst's fee
Do. do. do. .	Do.	2 0 0 and costs and 10/6 Analyst's fee
Do. do. do. ...	Do.	1 0 0 and costs and 10/6 Analyst's fee
Do. do. do. ..	Do.	2 0 0 and costs and 10/6 Analyst's fee
Do. do. do. ..	Do.	1 0 0 and costs and 10/6 Analyst's fee
Non-compliance with notice to abate nuisance ... ..	Thrice ad- journed and then withdrawn	costs
Do. do. do. ...	Twice adjourned for 7 days, then withdrawn	costs
Exposing unsound meat for sale ... ..	Convicted	6 weeks hard labour
Abusing and insulting Inspectors whilst on duty ..	Do.	costs
Allowing unregistered house to be occupied by lodgers ...	Do.	1 0 0 & costs or 14 days

## LINES FOR FUTURE ACTION.

The Annual Report of the Medical Officer of Health is required to "indicate directions for further consideration and action." These have been already discussed in detail, and it only remains for me to briefly summarise as follows the various recommendations submitted to you:—

(1) **The consideration and adoption of a comprehensive scheme for the conversion of the midden-privy to the water-carriage system of disposal of refuse, and the abolition of Tips within the town.**

I have again to record my firm belief that it would be difficult to over-estimate the danger to health resulting from the existing privies, which pollute the air and soil, and are hot-beds for the development of disease-germs. I am aware that this question in Stockport is a tremendous one to face, but, on the other hand, I am convinced, that any other sources of ill-health which may exist in your town, are comparatively small branches on the formidable trunk of insanitation constituted by the existing midden privies.

(2) The improvement, where and if practicable, of the existing system of scavenging, both as regards method and frequency. I am of opinion that this matter might repay special consideration.

(3) The revision of the Bye-laws with respect to the construction of sanitary conveniences in connection with buildings.

(4) The continuance and extension of your efforts to provide for the thorough cleansing and ventilation of the public sewers; and the removal, as soon as it can be afforded, of the existing defective flagged or bricked sewers.

(5) The general improvement of the housing of the working classes by the continued enforcement of existing legislation in that respect; and as regards new property, *by entirely disallowing the erection of any further privies* and by **enforcing stricter compliance with the building bye-laws**, especially those with regard to **the drainage of subsoils, the asphaltting or concreting of sites, and the provision of water-tight drain-joints.**

(6) **The provision of additional hospital accommodation**, to permit of the separate isolation of each of the more serious notifiable diseases, and **the erection of an unclimbable continuous barrier, 6ft. 6in. high, around the hospitable grounds.**

(7) The institution, if practicable, of a system of cottage nurseries subject to inspection, by **the voluntary registration of any respectable woman possessed of knowledge as to the feeding of infants, and of suitable accommodation for their reception**, with the object of minimizing the evils resulting from the employment of nursing-mothers in factories.

Various other lines of sanitary progress might be indicated, *e.g.*, the provision of a public abattoir, but being of secondary importance as compared with the foregoing recommendations, these matters will doubtless have for the present to stand aside.

CHARLES PORTER, Medical Officer of Health.

September 21st, 1896.



TABLE (A).

TABLE OF DEATHS DURING THE YEAR 1895, IN THE URBAN SANITARY DISTRICT OF STOCKPORT, CLASSIFIED ACCORDING TO DISEASES, AGE, AND LOCALITIES.

NAMES OF LOCALITIES adopted for the purpose of these Statistics; Public Institutions being shown as Separate Localities.	Mortality from all causes, at subjoined ages							MORTALITY FROM SUBJOINED CAUSES, DISTINGUISHING DEATHS OF CHILDREN UNDER FIVE YEARS OF AGE.																								
	At all Ages.	Under 1 year	1 and under 5	5 and under 15	15 and under 25	25 and under 65	65 and upwards		Smallpox.	Scarlatina.	Diphtheria.	Membranous Croup.	FEVERS.						Cholera.	Erysipelas.	Measles.	Whooping Cough.	Influenza.	Diarrhoea and Dysentery.	Rheumatic Fever.	Ague.	Phthisis.	Bronchitis, Pneumonia and Pleurisy.	Heart Disease.	Injuries.	All other Diseases.	TOTAL.
													Typhus.	Enteric or Typhoid.	Continued.	Relapsing.	Puerperal.															
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
LANCASHIRE HILL WARD	99	35	17	1	3	23	20	Under 5	...	...	...	...	...	...	...	...	...	...	...	9	2	...	6	...	...	3	9	..	...	23	52	
								5 upw'rds	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	2	1	..	...	6	11
HEATON LANE WARD.. ...	153	58	25	4	4	45	17	Under 5	..	...	1	...	...	...	...	...	...	...	...	8	4	...	20	...	...	4	16	..	1	29	83	
								5 upw'rds	..	...	...	...	...	...	...	1	..	...	...	...	...	...	...	...	...	...	2	1	...	...	9	17
OLD ROAD WARD .....	148	52	22	5	6	42	21	Under 5	..	...	...	1	...	...	...	...	...	...	...	10	4	...	15	..	...	4	14	...	...	26	74	
								5 upw'rds	...	...	1	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	1	3	...	...	...	11
PORTWOOD WARD .....	158	58	25	5	5	40	25	Under 5	...	1	1	...	...	...	...	...	...	...	...	6	5	...	12	..	...	..	29	..	...	29	83	
								5 upw'rds	...	...	1	1	...	2	..	...	...	...	...	...	...	1	..	...	1	...	...	...	...	...	9	31
ST. MARY'S WARD .....	111	29	13	4	5	41	19	Under 5	...	...	...	1	...	...	...	...	...	...	...	5	1	...	8	...	...	1	7	..	...	19	42	
								5 upw'rds	..	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	11
VERNON WARD .....	108	50	13	7	2	23	13	Under 5	...	...	...	...	...	...	...	...	...	...	...	4	3	...	9	...	...	...	23	...	..	24	63	
								5 upw'rds	...	1	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	3	11
SPRING BANK WARD .....	130	41	36	2	6	35	10	Under 5	..	...	1	2	...	...	...	...	...	...	...	7	2	...	10	...	...	3	18	..	...	34	77	
								5 upw'rds	..	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	2	...	...	12
HOLLYWOOD WARD .....	126	44	18	3	5	33	23	Under 5	...	...	...	2	...	...	...	...	...	...	...	7	1	...	12	...	...	5	10	...	...	25	62	
								5 upw'rds	...	...	...	...	...	2	...	...	1	...	...	...	...	...	...	...	...	...	1	...	1	...	...	6
EDGELEY WARD .....	111	35	17	4	6	31	18	Under 5	...	...	2	...	...	...	...	...	...	...	1	5	1	...	...	...	2	9	...	...	23	52		
								5 upw'rds	...	...	1	...	...	3	...	...	...	...	...	...	...	...	...	...	...	...	3	...	2	..	9	12
SHAW HEATH WARD .....	115	26	16	3	2	43	25	Under 5	...	...	...	3	...	...	...	...	...	...	...	2	...	...	8	...	...	2	7	...	...	20	42	
								5 upw'rds	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	1	...	9	15	11
ST. THOMAS' WARD .....	147	46	38	6	3	42	12	Under 5	...	...	2	...	...	...	...	...	...	...	...	11	2	...	21	...	...	2	15	...	1	30	84	
								5 upw'rds	...	...	2	..	...	1	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6	14
HEMPSHAW LANE WARD...	106	45	15	2	7	22	15	Under 5	..	...	1	...	...	...	...	...	...	...	...	1	4	...	11	..	...	1	8	...	1	33	60	
								5 upw'rds	...	...	...	...	...	1	..	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	5	11
CALE GREEN WARD .....	71	16	10	4	2	24	15	Under 5	...	...	...	...	...	...	...	...	...	...	...	2	1	...	6	...	...	..	5	...	...	12	26	
								5 upw'rds	..	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	7	10
HEAVILEY WARD.. ...	69	19	12	3	2	18	15	Under 5	...	1	...	1	...	...	...	...	...	...	...	2	...	..	5	...	...	2	8	1	..	11	31	
								5 upw'rds	...	...	...	1	...	1	...	...	1	..	...	...	...	...	...	...	...	...	...	1	..	3	10	7
INFIRMARY .....	61	1	8	4	7	35	6	Under 5	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	1	6	9		
								5 upw'rds	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	5	3	13
UNION WORKHOUSE .....	217	15	10	2	6	114	70	Under 5	..	...	...	...	...	...	...	...	...	...	...	4	..	...	2	...	...	2	5	...	...	12	25	
								5 upw'rds	...	..	...	...	...	1	..	...	...	...	...	...	...	...	...	...	...	...	...	4	...	...	27	48
ISOLATION HOSPITAL .....	11	...	..	3	1	7	...	Under 5	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
								5 upw'rds	...	2	...	...	...	7	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	..
TOTALS .....	1941	570	295	62	72	618	324	Under 5	...	2	8	10	...	...	...	...	...	...	1	83	30	..	154	...	...	32	183	2	4	356	865	
								5 upw'rds	...	4	6	3	...	20	...	...	7	...	1	1	2	16	13	5	...	134	280	138	28	418	1076	







TABLE (B).

TABLE OF POPULATION, BIRTHS, AND OF NEW CASES OF INFECTIOUS SICKNESS, COMING TO THE KNOWLEDGE OF THE MEDICAL OFFICER OF HEALTH, DURING THE YEAR 1895,  
IN THE URBAN SANITARY DISTRICT OF STOCKPORT, CLASSIFIED ACCORDING TO DISEASES, AGES, AND LOCALITIES.

NAMES OF LOCALITIES adopted for the purpose of these Statistics; Public Institutions being shown as Separate Localities.	POPULATION AT ALL AGES.		Registered Births.	Aged under 5 or over 5.	New Cases of Sickness in each Locality coming to the knowledge of the Medical Officer of Health.									Number of such cases removed from the several Localities for treatment in							TOTAL.		
	Census 1891.	Estimated to middle of 1895.			Smallpox.	Scarlatina.	Diphtheria.	Membranous Croup.	FEVERS.				TOTAL.	ISOLATION HOSPITAL.				WORKHOUSE HOSP.					
									Enteric or Typhoid.	Continued.	Puerperal.	Erysipelas.		Smallpox.	Scarlatina.	Enteric or Typhoid.	Puerperal.	FEVERS.					
																		Enteric or Typhoid.	Continued.	Erysipelas.			
(a)	(b)	(c)	(d)	(e)	1	2	3	4	5	6	7	8											
LANCASHIRE HILL WARD			173	Under 5	...	3	...	...	...	...	...	...	2	32	...	1	...	...	...	...	...	1	19
				5 upw'ds	...	20	3	...	3	...	1	2	29		...	16	1	1	...	...	...	18	
HEATON LANE WARD.			165	Under 5	...	7	1	1	1	...	...	...	10	26	...	3	...	...	...	...	...	3	7
				5 upw'ds	...	8	2	...	2	...	1	3	16		...	4	...	...	...	...	...	4	
OLD ROAD WARD			209	Under 5	...	4	...	1	...	...	...	1	6	26	...	2	...	...	...	...	...	2	13
				5 upw'ds	...	11	...	...	5	...	1	3	20		...	10	1	...	...	...	...	11	
PORTWOOD WARD			260	Under 5	...	7	1	...	...	...	...	...	8	29	...	4	...	...	...	...	...	4	11
				5 upw'ds	...	12	3	2	2	...	1	1	21		...	7	...	...	...	...	...	7	
ST. MARY'S WARD			123	Under 5	...	2	...	2	...	...	...	...	4	10	...	2	...	...	...	...	...	2	5
				5 upw'ds	...	2	1	...	2	...	...	1	6		...	1	2	...	...	...	...	3	
VERNON WARD			149	Under 5	...	2	1	...	...	...	...	...	3	23	...	1	...	...	...	...	...	1	9
				5 upw'ds	2	6	2	1	4	1	1	3	20		2	4	2	...	...	...	...	8	
SPRING BANK WARD			161	Under 5	...	...	1	3	...	...	...	...	4	11	...	...	...	...	...	...	...	...	2
				5 upw'ds	...	3	...	...	2	...	1	1	7		...	1	1	...	...	...	...	2	
HOLLYWOOD WARD			205	Under 5	...	3	1	2	...	...	...	...	6	22	...	2	...	...	...	...	...	2	10
				5 upw'ds	...	6	1	...	8	...	1	...	16		...	3	5	...	...	...	...	8	
EDGELEY WARD			277	Under 5	...	2	1	...	1	...	...	...	4	24	...	1	1	...	...	...	...	2	11
				5 upw'ds	...	11	1	...	6	1	...	1	20		...	6	3	...	...	...	...	9	
SHAW HEATH WARD			125	Under 5	...	5	2	4	...	...	...	...	11	26	...	5	...	...	...	...	...	5	11
				5 upw'ds	...	5	1	...	7	...	...	2	15		...	1	5	...	...	...	...	6	
ST. THOMAS' WARD			180	Under 5	...	5	3	4	...	...	...	...	12	42	...	3	...	...	...	...	...	3	22
				5 upw'ds	...	10	1	...	16	...	...	3	30		...	8	11	...	...	...	...	19	
HEMPSHAW LANE WARD			165	Under 5	...	2	2	...	...	...	...	...	4	15	...	2	...	...	...	...	...	2	6
				5 upw'ds	...	3	...	...	7	...	...	1	11		...	2	2	...	...	...	...	4	
CALE GREEN WARD			140	Under 5	...	6	...	1	...	...	...	...	7	27	...	...	...	...	...	...	...	...	4
				5 upw'ds	...	14	3	1	1	...	...	1	20		...	4	...	...	...	...	...	4	
HEAVILEY WARD...			124	Under 5	...	6	1	1	...	...	...	...	8	20	...	...	...	...	...	...	...	...	3
				5 upw'ds	...	4	3	1	3	...	1	...	12		...	1	2	...	...	...	...	3	
INFIRMARY				Under 5	...	1	...	...	...	...	...	...	1	4	...	1	...	...	...	...	...	1	1
				5 upw'ds	...	...	...	...	...	...	...	3	3		...	...	...	...	...	...	...	...	
UNION WORKHOUSE				Under 5	...	...	...	...	...	...	...	...	...	7	...	...	...	...	...	...	...	...	7
				5 upw'ds	...	...	...	...	1	1	...	5	7		...	...	...	...	1	1	5	7	
ISOLATION HOSPITAL				Under 5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
				5 upw'ds	...	...	...	...	...	...	...	...	...		...	...	...	...	...	...	...	...	
TOTALS	70263		2456	Under 5	...	55	14	19	2	...	...	1	91	344	...	27	1	...	...	...	...	28	141
				5 upw'ds	2	115	21	5	69	3	8	30	253		2	68	35	1	1	1	5	113	

The two cases of Smallpox were treated in the Whitehill Hospital.



No.		Description		Amount	
1	100	Jan 1	Balance	100	100
2	100	Jan 2	Jan 2	100	100
3	100	Jan 3	Jan 3	100	100
4	100	Jan 4	Jan 4	100	100
5	100	Jan 5	Jan 5	100	100
6	100	Jan 6	Jan 6	100	100
7	100	Jan 7	Jan 7	100	100
8	100	Jan 8	Jan 8	100	100
9	100	Jan 9	Jan 9	100	100
10	100	Jan 10	Jan 10	100	100
11	100	Jan 11	Jan 11	100	100
12	100	Jan 12	Jan 12	100	100
13	100	Jan 13	Jan 13	100	100
14	100	Jan 14	Jan 14	100	100
15	100	Jan 15	Jan 15	100	100
16	100	Jan 16	Jan 16	100	100
17	100	Jan 17	Jan 17	100	100
18	100	Jan 18	Jan 18	100	100
19	100	Jan 19	Jan 19	100	100
20	100	Jan 20	Jan 20	100	100
21	100	Jan 21	Jan 21	100	100
22	100	Jan 22	Jan 22	100	100
23	100	Jan 23	Jan 23	100	100
24	100	Jan 24	Jan 24	100	100
25	100	Jan 25	Jan 25	100	100
26	100	Jan 26	Jan 26	100	100
27	100	Jan 27	Jan 27	100	100
28	100	Jan 28	Jan 28	100	100
29	100	Jan 29	Jan 29	100	100
30	100	Jan 30	Jan 30	100	100
31	100	Jan 31	Jan 31	100	100
32	100	Feb 1	Feb 1	100	100
33	100	Feb 2	Feb 2	100	100
34	100	Feb 3	Feb 3	100	100
35	100	Feb 4	Feb 4	100	100
36	100	Feb 5	Feb 5	100	100
37	100	Feb 6	Feb 6	100	100
38	100	Feb 7	Feb 7	100	100
39	100	Feb 8	Feb 8	100	100
40	100	Feb 9	Feb 9	100	100
41	100	Feb 10	Feb 10	100	100
42	100	Feb 11	Feb 11	100	100
43	100	Feb 12	Feb 12	100	100
44	100	Feb 13	Feb 13	100	100
45	100	Feb 14	Feb 14	100	100
46	100	Feb 15	Feb 15	100	100
47	100	Feb 16	Feb 16	100	100
48	100	Feb 17	Feb 17	100	100
49	100	Feb 18	Feb 18	100	100
50	100	Feb 19	Feb 19	100	100
51	100	Feb 20	Feb 20	100	100
52	100	Feb 21	Feb 21	100	100
53	100	Feb 22	Feb 22	100	100
54	100	Feb 23	Feb 23	100	100
55	100	Feb 24	Feb 24	100	100
56	100	Feb 25	Feb 25	100	100
57	100	Feb 26	Feb 26	100	100
58	100	Feb 27	Feb 27	100	100
59	100	Feb 28	Feb 28	100	100
60	100	Feb 29	Feb 29	100	100
61	100	Feb 30	Feb 30	100	100
62	100	Mar 1	Mar 1	100	100
63	100	Mar 2	Mar 2	100	100
64	100	Mar 3	Mar 3	100	100
65	100	Mar 4	Mar 4	100	100
66	100	Mar 5	Mar 5	100	100
67	100	Mar 6	Mar 6	100	100
68	100	Mar 7	Mar 7	100	100
69	100	Mar 8	Mar 8	100	100
70	100	Mar 9	Mar 9	100	100
71	100	Mar 10	Mar 10	100	100
72	100	Mar 11	Mar 11	100	100
73	100	Mar 12	Mar 12	100	100
74	100	Mar 13	Mar 13	100	100
75	100	Mar 14	Mar 14	100	100
76	100	Mar 15	Mar 15	100	100
77	100	Mar 16	Mar 16	100	100
78	100	Mar 17	Mar 17	100	100
79	100	Mar 18	Mar 18	100	100
80	100	Mar 19	Mar 19	100	100
81	100	Mar 20	Mar 20	100	100
82	100	Mar 21	Mar 21	100	100
83	100	Mar 22	Mar 22	100	100
84	100	Mar 23	Mar 23	100	100
85	100	Mar 24	Mar 24	100	100
86	100	Mar 25	Mar 25	100	100
87	100	Mar 26	Mar 26	100	100
88	100	Mar 27	Mar 27	100	100
89	100	Mar 28	Mar 28	100	100
90	100	Mar 29	Mar 29	100	100
91	100	Mar 30	Mar 30	100	100
92	100	Mar 31	Mar 31	100	100
93	100	Apr 1	Apr 1	100	100
94	100	Apr 2	Apr 2	100	100
95	100	Apr 3	Apr 3	100	100
96	100	Apr 4	Apr 4	100	100
97	100	Apr 5	Apr 5	100	100
98	100	Apr 6	Apr 6	100	100
99	100	Apr 7	Apr 7	100	100
100	100	Apr 8	Apr 8	100	100



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County Borough of Stockport,

Public Health Department,

PARK STREET,

Stockport, 25/2/1896

CHARLES PORTER, M.D., D.P.H.  
MEDICAL OFFICER OF HEALTH.

Dear Sir,

I shall be glad to  
send you a set of the  
Reports issued by me  
since I have held my  
present post, but before  
doing so I beg leave to  
state that in accordance  
with the printed request  
in the Journal I have  
hitherto always sent  
duplicate copies of my  
reports, I thought one  
of them was for the  
Library. Is this not so?

Yours truly  
Chas Porter

